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Research and professional training programs on deafness sponsored by the Department of Health, Education, and Welfare are introduced and detailed in chart form. The programs are listed according to the Department agencies responsible, including the following divisions of the Social and Rehabilitation Service: the Rehabilitation Services Administration, the Center for Research and Advanced Training in Deafness, the International Program, and the Children's Bureau. Also listed are programs of the Bureau of Education for the Handicapped within the U.S. Office of Education and of the National Institute of Neurological Diseases and Blindness. (JD)

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DEAFNESS

Edna P. Adler, Editor

Journal of Rehabilitation of the Deaf

MONOGRAPH NUMBER 1 MARCH, 1969

The *Journal of Rehabilitation of the Deaf* is the official organ of the Professional Rehabilitation Workers with the Adult Deaf, an organization of rehabilitation counselors, social workers, psychologists, audiologists, speech therapists, and allied specialties whose major concern is professional work with the deaf adult.

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DEAFNESS

Research and Professional Training Programs on Deafness Sponsored by the Department of Health, Education, and Welfare

Edna P. Adler, Editor

Journal of Rehabilitation of the Deaf

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Journal Editor and
Project Director
Glenn T. Lloyd

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TABLE OF CONTENTS

Page

Acknowledgements i
Foreword iii
Introduction iv
Section I. The Rehabilitation Services Administration of the Social and Rehabilitation Service 1
- A. Research and Demonstration Programs in the Area of Deafness 12
- B. Research and Demonstration Projects for the Deaf-Blind 35
- C. Grantee Agencies of Research and Demonstration Projects Concerning Deafness 37
- D. Project Directors of Research and Demonstration Grant Programs Concerning Deafness . . 39
- E. Long-Term Professional Training Programs in the Area of Deafness 43
- F. Long-Term Professional Training Programs in Deafness Enrollment 51
- G. Long-Term Professional Training Programs in Deafness Grant Funds by Fiscal Year 52
- H. Short-Term Training Programs in the Area of Deafness 53
- I. Grantee Agencies of Short-Term Training Programs Concerning Deafness 81
- J. Project Directors of Short-Term Training Programs Concerning Deafness 83
- K. Short-Term Training Programs in the Area of the Deaf Grant Funds by Fiscal Year 86

Section II. Center for Research and Advanced Training in Deafness Rehabilitation, Social and Rehabilitation Service 89
- A. Chart of Activities 89
- B. Short-Term Training Programs in Deafness 92

Section III. International Program of the Social and Rehabilitation Service 95
- A. Research on Deafness 96
- B. Research Projects in the Area of the Deaf Grant Funds by Fiscal Year 99

Section IV. Children's Bureau, Social and Rehabilitation Service 100
- A. Research and Demonstration Projects in Deafness 103
- B. Training Professional Workers for the Deaf 104

Section V. Bureau of Education for the Handicapped, U. S. Office of Education 105
- A. Research and Demonstration Projects in Deafness 108
- B. Professional Training Programs in the Area of Deafness 118
- C. Division of Educational Services, Media Services and Captioned Films 125
- D. Division of Educational Services, Media and Captioned Films Research and Demonstration Projects in Deafness 129
- E. Division of Educational Services, Training for Professional Workers for the Deaf 132

Page

Section VI. National Institute of Neurological Diseases and Blindness, Department of Health, Education, and Welfare 136
- A. Training Programs Concerning Hearing Disorders 144
- B. Research Grants to Extramural Research Centers for Study of Deafness 154
- C. Extramural Research Grants on Vestibular System 160
- D. Extramural Research Grants on Deafness and Hearing Loss 166
- E. Extramural Research Grants on Hearing Discrimination 194
- F. Research Grants for Intramural Research Projects on Hearing 202
- G. Extramural Research Grants on Inner Ear-Cochlea 207
- H. Extramural Research Grants on Communicative Disorders 222
- I. Extramural Research Grants on Middle Ear, Otosclerosis, Otitis, Equilibrium Loss 224
- J. Extramural Research Grants on Electrophysiology and Anatomy of Auditory System . . . 228

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FOREWORD

The Rehabilitation Services Administration is proud to make available to the growing body of students of and workers for the deaf this valuable compilation of research and training activities relating to deafness that have been supported by the Department of Health, Education, and Welfare through December, 1967.

Research and Professional Training Programs on Deafness is the most comprehensive source of information in the important fields it covers that has appeared. We commend it as a point of reference and inspiration for workers in vocational rehabilitation, for program developers, for researchers, and for students.

While the major work was carried out in the Communication Disorders Branch of the Division of Disability Services, the accuracy, completeness and detail reported herein reflect the splendid cooperation received throughout from the participating Departmental agencies. We are deeply appreciative.

Joseph Hunt
Commissioner
Rehabilitation Services Administration

INTRODUCTION

This report, dealing with research and professional training programs related to deafness, reflects a decade of progress in the development of rehabilitation services for deaf persons in the United States.

To a large extent, the rapid progress of recent years is the product of two major conceptions which emerged during the 1950's in the professions concerned with deafness: One was recognition of the need for innovative research to develop new knowledge and new techniques for dealing with this difficult disability. The other, which developed concurrently, was a growing awareness of the necessity for new professional training programs to alleviate manpower shortages and to enable advances in rehabilitation to be put into practice as quickly as possible.

The number and diversity of research and professional training programs illuminating the pages of this report suggest substantial efforts on the part of the professions most concerned with deafness to catch up with needs which sometimes seem overwhelming.

We must still contend with serious gaps in what is known about overcoming the effects of deafness and large deficits in the professionally qualified manpower needed to provide services to persons who are deaf. A good beginning has been made, but the need to do more remains vast and urgent.

Recent research in deafness is more impressive. Investigations of extraordinary depth and latitude have been directed at the psychological, social, communication, and employment problems of people who, because of their irreversible severe hearing loss, require special services to enable them to function in a world of sound. Parallel to these investigations is continuing medical research aimed at developing better preventive and therapeutic methods and, ultimately, a cure for deafness.

In view of the present shortage of professional personnel capable of meeting needs generated by the complex problems of deafness, training programs assume an importance fully equaling that of research. Particularly impressive is the continuing importance of short-term training courses for thousands of professional and lay workers who are needed to provide specialized services for deaf persons.

This publication brings together under one cover comprehensive information concerning research and training activities related to deafness that are supported by the Department of Health, Education, and Welfare. It should be of great value to rehabilitation workers and their colleagues in other professions; to researchers, students, and program planners; and to deaf persons themselves and members of their families. Hopefully, it will stimulate a greater application of new knowledge developed through research, along with further research and professional training.

Programs such as those described in this report assure a better future for Americans of all ages who, although they must live apart from the world of sound, are very much a part of the world.

Mary E. Switzer
Administrator
Social and Rehabilitation Service

RESEARCH AND PROFESSIONAL TRAINING PROGRAMS IN DEAFNESS SUPPORTED IN PART BY THE UNITED STATES DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

INTRODUCTION

This report on research and professional training programs in deafness supported by the United States Department of Health, Education, and Welfare is also a record of the most significant decade of service to deaf people. It is a way to recognize the dedicated effort of the countless persons who have done and are continuing to do so much to mitigate the hardships of deafness. Hopefully, the document will inspire many additional people to consider the consequence of total irreversible hearing loss in terms of creative research and professional training for service that will benefit deaf people.

It is a great pleasure for the Social and Rehabilitation Service to make available this handbook which provides a historic record of research and professional training programs in deafness supported by the Office of Education, the Captioned Films for the Deaf Agency of the Office of Education, the Children's Bureau, the National Institute of Neurological Diseases and Blindness, and the Rehabilitation Services Administration. In addition to narrative and statistical data pertinent to deafness, each of these agencies has submitted information on its agency program, its purpose, goals, and legislative authority.

DEFINITION

Deafness is a minority handicap. It is seldom encountered in the public domain. In a crowd, not more than one person in a thousand will be deaf and his handicap will not be readily apparent. The normal appearance of deaf people belies their serious handicap. In most instances, it is only when a sound situation arises that their outward normality becomes diffused and their suddenly obvious hearing handicap commands attention.

When deafness is perceived, it is beheld within the frame of reference that experience or hearsay has provided for the viewer. Few people are informed on it. Consequently, a wide array of feelings and conceptions of hearing inability prevail. Feelings evoked in the presence of deafness may be pity, wonder, disbelief, disinterest, and even distaste. It is not infrequently equated with mental incompetency.

On the other hand, the deaf person may be thought to be hard of hearing, a fairly prevalent milder form of hearing loss in which the individual retains useable auditory reception. Spoken language is his normal channel for communication. This deviates from the situation of deaf persons who may have excellent speech but who prefer to use manual communication for fuller sharing of thought and for better intake of messages from hearing persons skilled in manual communication.

An unfixed and uncertain public image of deafness is detrimental to the welfare of deaf people. The Social and Rehabilitation Service has long recognized this. Ongoing research projects and professional training programs are working to develop better public relations systems. For example, the National Theater of the Deaf, which has been widely acclaimed in the press and otherwise, is a unique effort to inform the public of the special capabilities of deaf people. A national program in manual communication reaches thousands of people who need to develop this skill so that they may give better service to deaf persons. The Registry of Interpreters for the Deaf is bringing more effective community service to deaf people and is making more community participation possible for them. The inbredness and isolation of the deaf community is thus greatly reduced, with consequent opportunity for growth and an improved image of deaf people.

It is vastly encouraging to note that 19 of the 23 recommendations for action to expand vocational rehabilitation services to the deaf made by an ad hoc committee in 1965 have already been substantially treated. The greater number of deaf people who are being rehabilitated annually reflects very favorably on expanding research and professional training programs that are creating for them better service resources.

RESEARCH

The impressive story of research in deafness described in this book reveals the extraordinary depth and latitude in which special investigations have been directed. The majority of the studies concern the psychological, the social, the communication, and the employment problems of people whose irreversible severe hearing loss requires special services for maximum function in a hearing world. Alongside the foregoing is medical research which is penetrating the physical ear for prevention, better intervention, and possible cure of deafness.

It is hoped that greater utilization of research on deafness will result from the availability of this comprehensive record of completed and ongoing studies in severe hearing impairment supported by the Department of Health, Education, and Welfare.

TRAINING

In the face of a growing population of early profoundly deaf people due to the recent rubella epidemic, the need for more professional training programs in deafness takes on added urgency. The present shortage of trained personnel to conduct research in deafness and to provide the many services that deaf people need is assuming emergency status. Short-term training programs which have provided important experience in deafness for thousands of professional and lay people are expected to continue to provide specific training to increase the effectiveness of service for deaf people.

FUTURE ACTIVITY

Communication is a serious problem for a great many deaf people. It is the subject of numerous research projects and rightly so. These studies are helping to bring about a much better understanding of the language limitations of deaf people which are the underlying cause of the bulk of their communication difficulties. Recent findings on methods for language development for deaf babies and pre-schoolers through parent education herald a new era. Continuation of this research and the establishment of special professional training programs to train people to work with deaf babies and their parents will be a special concern of the Department of Health, Education, and Welfare in the coming years.

Communication centers where deaf people may receive training in speech, reading, creative writing, and use of special devices for telephone communication are needed everywhere. Research will continue to demonstrate these vital resources that improve interrelationship with hearing people and situations with important outcome in better vocational and social opportunities for deaf people.

Greater cooperation of agencies concerned with deafness in instituting more effective programs for deaf people is developing. The present joint effort of the Office of Education and the Social and Rehabilitation Service to provide deaf people with vocational training opportunities in existing community facilities will be followed by other projects that will aid in the transition of deaf people from dependence to independence. Motivation of deaf children, training programs for dormitory counselors who work with deaf children at residential schools, upgraded curriculum, child-oriented mental health service, and standards and guidelines for parent education are research and professional training activities to effect earlier rehabilitation of deaf people.

A brighter tomorrow for deaf people is envisioned as research and professional training programs continue to remove or to reduce communication, social, and employment barriers that prevent the full exercise of their inherent normality.

THE REHABILITATION SERVICES ADMINISTRATION

The Rehabilitation Services Administration was established in 1967 as a cooperating agency of the Social and Rehabilitation Service and carries on the function of the Vocational Rehabilitation Administration which had its beginning in 1954. Previous to that, this agency, which has as its only concern disabled persons whose disability is a vocational handicap in that it interferes with getting or keeping employment, was known as the Office of Vocational Rehabilitation. The vocational rehabilitation movement dates back to 1920 with the establishment of a service program that helped to restore disabled veterans to employment and productive living. Since that time, the State-Federal vocational rehabilitation program of which the Rehabilitation Services Administration is the Federal partner, has grown steadily in enlarging concepts of service to physically and mentally disabled persons.

SERVICES

These services include:

Evaluation, including medical diagnosis, to learn the nature and degree of disability and to help evaluate the individual's work capacity.

Counseling and guidance in achieving good vocational adjustment.

Medical, surgical, psychiatric, and hospital care and related therapy, to reduce or remove the disability.

Physical aids such as artificial limbs and other prosthetic and orthotic devices needed to increase work ability.

Training for a vocation, and pre-vocational and personal adjustment training.

Maintenance and transportation during rehabilitation.

Equipment, tools, and licenses for work on a job or in establishing a small business.

Placement in a job suited to the individual's physical and mental capacity.

Post-placement follow-up for satisfactory adjustment to a job.

PROGRAM AIMS

The overall objective of the Rehabilitation Services Administration is to provide leadership and the means for furnishing vocational rehabilitation services to all the disabled who need and can benefit from them. Within this framework, the main objectives of the Rehabilitation Services Administration are:

1. To help the States establish and maintain vocational rehabilitation programs of services for the disabled.
2. To increase rehabilitation knowledge and techniques and their application in practice.
3. To increase the supply of trained rehabilitation manpower which continues to be in severe shortage.
4. To increase and improve the physical plants that serve the disabled, including rehabilitation facilities and workshops, training settings, and other special facilities.
5. To educate the general public and specific public such as employers, researchers, public and voluntary agencies, in vocational rehabilitation of the disabled, and to disseminate available rehabilitation knowledge.

LEGISLATIVE HISTORY

Beginning with the Smith-Fess Act in 1920 which authorized States participating in this first vocational rehabilitation grant-in-aid program to provide counseling, job training, orthotic and prosthetic appliances and job placement for disabled veterans and persons disabled in industry, the Congress has enacted numerous other laws which have increased and expanded the program base to its present broad scope of services.

The Social Security Act of 1935 provided permanent authorization for continuance of the program with appropriations for increasing and strengthening its operation.

The 1943 Amendments to the original Vocational Rehabilitation Act broadened the program in authorizing 1) medical, surgical, and other physical restoration and services to eliminate or reduce disabilities; 2) services for the mentally ill and the mentally retarded; and 3) entry of the separate State agencies serving the blind.

The Vocational Rehabilitation Act Amendments of 1954 were a modernizing move which provided a new financing formula for the States, a new system of project grants to State agencies, and authority for research, demonstration, and training activities.

The 1965 Act, otherwise known as Public Law 89-333, authorized new and expanded vocational rehabilitation programs to make service benefits available to all the disabled who need and can use them and extended length of professional training from 2 to 4 years to increase the number of available doctoral level people to mount and conduct programs. Increase in the Federal Government share of the cost of basic services to a flat 75 percent is a significant feature of the 1965 Act. Support for special State agency projects to develop innovative efforts to meet the needs of severely disabled people, and the extension of vocational rehabilitation services that will lead to "---a gainful occupation more consistent with his capacities and abilities" are other principal features of this forward-looking legislation.

The enactment of the 1967 Vocational Rehabilitation Amendments which authorized the establishment of the first national training facility for deaf-blind people and greater Federal support of vocational rehabilitation service for migratory workers, carries further the charge of the 1965 Acts for the creation of innovative services for severely disabled persons.

THE PROGRAM FOR DEAF PEOPLE

Vocational rehabilitation is the main public service program that is actively concerned with the welfare of deaf adults. In spite of the circumscribed nature of vocational rehabilitation service to deaf people in the past, which had its roots for the most part in personnel and facility shortages, the program has been an open door to greater opportunity for thousands of deaf individuals. The challenge of P.L. 89-333 and the activity related to current Statewide planning of comprehensive vocational rehabilitation services for the disabled are doing much to focus greater attention on the special needs of deaf people.

In a population of over 50,000 deaf people who need or can benefit from vocational rehabilitation services, upwards of 2,500 are being rehabilitated yearly. This number is expected to increase appreciably as recruitment of trained personnel eases the continuing severe manpower shortage and as more facilities for deaf people are established. Six professional training programs are helping to supply trained counselors, social workers, teachers, psychologists, psychiatrists, and speech pathologists and audiologists, but many more will be needed as the States complete their planning for more rehabilitation programs for deaf people.

New concepts of service to reduce the handicapping aspects of deafness emphasize 1) language training to offset the serious communication limitations of many deaf people; 2) diagnosis, evaluation and adjustment training programs for the multiply handicapped; 3) special mental health programs; 4) community counseling centers; and 5) vocational training programs for the deaf in existing community facilities.

Interpreting for deaf people which was authorized as a rehabilitation service by the 1965 Vocational Rehabilitation Administration Amendments is being used by State agencies to effect better service and to make more training opportunities possible.

The deaf population of approximately 250,000 individuals is and is not a cross section of the general population. The great majority of deaf people have normal intelligence, strength, and mobility but few aspire to or succeed in noteworthy achievement in high-level occupations. Many deaf people make a rapid rise to a vocational plateau beyond which few go further. Variable reasons ascribed to this situation are lack of opportunity for training, an inadequate public image, and a pervasive attitude of low aspiration held by those who work with them. The disproportionate number of deaf persons, as compared to normally hearing persons, who remain in skilled or semi-skilled work rather than strive for higher level callings for which many qualify, urges that the Rehabilitation Services Administration implement programs to identify and train qualified deaf people to make the worthy contributions for which they have potential.

In light of the above facts, vocational rehabilitation is seen as a very fertile area for research to devise service techniques that will cultivate and complement the needs and capabilities of deaf persons. Correspondingly, professional training programs are needed to provide competent staff to conduct purposeful research that will lead to demonstrations of effective service and training processes for deaf people. The replication of successful research demonstrations by the States requires that a host of trained personnel be available.

The record of Social and Rehabilitation Service research and demonstration programs and professional training programs contained in this document is impressive evidence of commitment and deep concern for the welfare of deaf people.

LEGAL BASE FOR RESEARCH AND TRAINING

Research and professional training in deafness had their beginning in 1957, three years after the enactment of Public Law 83-565, otherwise known as the Vocational Rehabilitation Act of 1954, which authorized a comprehensive Research and Training grant program. Statutory authority is contained in Section 4.(a) (1) of the Act and reads as follows:

> "...for paying part of the cost of projects for research, demonstrations, training and traineeships, and projects for the establishment of special facilities and services, which, in the judgment of the Secretary of Health, Education, and Welfare, hold promise of making a substantial contribution to the solution of vocational problems common to all or several States."

Section 4.(d) (1) makes the following provisions:

> "...for a National Advisory Council on Vocational Rehabilitation consisting of the Secretary, for his designee who shall be Chairman, and twelve members appointed without regard to civil service laws by the Secretary. The twelve appointed members shall be leaders in fields concerned with vocational rehabilitation or in public affairs, and six of such twelve shall be selected from leading medical, educational or scientific authorities who are outstanding for their work in the vocational rehabilitation of physically handicapped individuals. Three of the twelve shall be persons who are themselves physically handicapped..."

Section 4.(d) (2) authorizes the Council

> "to review applications for special projects submitted to the Secretary under this section and recommend to the Secretary for grants under this section any such projects or any projects initiated by it which it believes show promise of making valuable contributions to the vocational rehabilitation of physically handicapped individuals."

PROCEDURES

Among others, consultants to the hearing impaired within the Rehabilitation Services Administration have an important role in instrumenting the provisions outlined in these Sections. They promote and help to design, review, and evaluate research and demonstration projects that will contribute to increased understanding of the rehabilitation potential of deaf people. In the development of sound and productive projects which meet the established criteria and the rehabilitation needs of deaf people, effective treatment in review and evaluation by the Council is assured. Preliminary technical evaluation of the projects by the Sensory Study Section,[1] a group of officially appointed nongovernment experts in the field of sensory disabilities, and an executive secretary who is a professional member of the staff, is helpful in suggesting changes and in identifying needs and problems of deaf people which require certain and specific research.

The comprehensive Social and Rehabilitation Service Research and Demonstration grant program provides a liberal framework for research and demonstration projects. Planning grants provide opportunity to test pre-set theories and hypotheses and to develop effective research patterns for full-scale projects. Demonstration of research over a period of years helps to establish needed prototypes. Continued development of prototypes aids in strengthening and refining innovative rehabilitation service techniques. This process is particularly helpful in developing programs for deaf people who are a thinly scattered minority population with highly specialized service needs.

The opportunity provided by the Vocational Rehabilitation Amendments of 1954 for mounting professional training programs in deafness to make traineeships available for persons interested in working with deaf people has been an important factor in implementing more effective research and in establishing more and better service programs for the deaf. Research and professional training are critically interdependent in the area of deafness in that communication and deep knowledge of deafness are indispensable to successful service programs.

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[1] Present members of the Sensory Study Section are: **Kenneth A. Altshuler, M.D.**, New York State Psychiatric Institute; **Mary Rose Costello, Ph.D.**, Henry Ford Hospital, Detroit, Michigan; **Lowell M. Ebel**, Kansas Services for the Blind, Topeka, Kansas; **Jon Eisenson, Ph.D.**, Scottish Rite Institute for Childhood Aphasia, Palo Alto, California; **Newman Guttman, Ph.D.**, Bell Telephone Laboratories, Inc., Naperville, Illinois; **Leslie H. Hicks, Ph.D.**, Howard University, Washington, D.C.; **Marina P. Meyers, M.D.**, Glen Cove, New York; **Norman M. Yoder, Ph.D.**, Office for the Blind, Department of Public Welfare, Harrisburg, Pennsylvania; and **Reverend John W. Stafford (Chairman)**, Provincial Superior, Clerics of St. Viator, Evanston, Illinois. Other persons who have served on the Sensory Study Section are: **John W. Black, Ph.D.**, The Ohio State University, Columbus, Ohio; **Richard Brill, Ed.D.**, California School for the Deaf, Riverside, California; **Emory L. Cowen, Ph.D.**, The University of Rochester, Rochester, New York; * **Grant Fairbanks, Ph.D.**, Stanford Research Institute, Menlo Park, California; **Hans G. Furth, Ph.D.**, Catholic University of America, Washington, D.C.; **Richard E. Hoover, M.D.**, Johns Hopkins University, Baltimore, Maryland; **Henry Imus, Ph.D.**, U.S. Naval Medical Center, Pensacola, Florida; **Francis L. Lederer, M.D.**, University of Illinois, College of Medicine, Chicago, Illinois; **Berthold Lowenfeld, Ph.D.**, California School for the Blind, Berkeley, California; **Douglas C. MacFarland, Ph.D.**, Virginia Commission for the Visually Handicapped, Richmond, Virginia; **Richard Silverman, Ph.D.**, Central Institute for the Deaf, St. Louis, Missouri; **Chester A. Swinyard, M.D.**, New York University Medical Center, New York, New York; **Joseph M. Wepman, Ph.D.**, University of Chicago, Chicago, Illinois; and **George R. Yacorzynski, Ph.D.**, Northwestern University, Chicago, Illinois.

* Deceased.

RESEARCH AND DEMONSTRATION PROGRAMS IN THE AREA OF DEAFNESS

Research in deafness sponsored by the Social and Rehabilitation Service is concerned with the processes of living that present barriers to many deaf persons. It is distributed broadly in the areas of occupational conditions of the deaf, communication disorders, and the psychosocial problems related to deafness.

In the first category, unemployment and underemployment of deaf people are principal research targets. One national and two regional surveys have been important fact finding instruments in determining the employment range of deaf individuals and the conditions in which they work. In turn, this study has stimulated creative research in vocational rehabilitation procedures, vocational exploration, and employer attitudes. An example of research in vocational exploration is the theater for the deaf project which is demonstrating excitingly new employment for deaf people in the theater arts. Another example is an investigation of Civil Service examination procedures that will help to open more Federal employment to deaf people. A report on the occupational adjustment of professional deaf people, published in 1967,[2] has important guidelines for rehabilitation counselors in optimum training and employment opportunities for deaf people with high potential. Innovative service techniques for multiply handicapped deaf people are being demonstrated at special diagnosis, evaluation, and adjustment training programs located at community workshops and comprehensive vocational rehabilitation centers. In a cooperative effort with the Office of Education, three vocational training programs for deaf people at vocational-oriented junior colleges are being planned to demonstrate how such schools can effectively train qualified deaf persons for appropriate employment at minimal cost.

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[2] "Deaf Persons in Professional Employment," Charles C. Thomas, Publisher, Springfield, Illinois.

The communication disorders of deaf people which range from inadequate speech to severe language limitations reflected in poor reading and creative writing ability, are the subjects of numerous studies. New focus on language training for deaf babies and preschool age deaf children is stimulating creative research in this previous neglected area. Manual English, an improved form of manual communication, has been used successfully as a language training tool at research programs for severely handicapped deaf people. Interpreting for deaf people, a long unrecognized art, is receiving deserved research attention. The eventual status of interpreting as a professional calling will be very helpful to deaf people who need this service. Special devices that enable deaf people to make independent telephone calls are being demonstrated as a research effort. The effective demonstration of speech indicators, dialcode, electrowriters, and teletypewriters is reducing the impediment to distance communication for deaf people.

Investigation of the psychological and social aspects of deafness have been concerned with special mental health care for deaf people, genetics, community service, and the development of a more responsive deaf community for better opportunities, and an improved public image of deaf people. The research conducted by the New York State Psychiatric Institute has effectively demonstrated techniques whereby deaf people may receive psychiatric services which, prior to this work, had not been available anywhere. State operation of this program is providing a pattern for other States. Community service centers for deaf people in metropolitan areas are demonstrating the need for coordinating, referral, evaluative, and counseling services for the better rehabilitation of the deaf. The response of deaf people to these services is indicating that centers are needed in all metropolitan areas. Research has helped to develop a format for a training course in safety for deaf drivers which is bringing important public attention to the good driving habits of deaf people. The Council of Organizations Serving the Deaf has brought together voluntary and professional organizations of and for the deaf to share leadership and action in the development of public programs for deaf people. The heavy involvement of deaf leadership in this research is an important image builder.

SOCIAL AND REHABILITATION SERVICE RESEARCH AND DEMONSTRATION PROJECTS IN DEAFNESS (Pages 12-34)

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
7* 1955-1962 $507,505	Family and Mental Health Problems in a Deaf Population "Family and Mental Health Problems in a Deaf Population"	New York State Psychiatric Institute, 722 West 168th Street, New York, N.Y. 10032 Franz J. Kallman, M.D.	To help overcome vocational disability in deaf persons with mental health problems by establishing a psychiatric clinic where treatment is especially designed for those who are unable to carry on a normal conversation.
29* 1955-1959 $59,194	A Study of Factors Associated with Success in Lipreading "A Study of Factors Associated with Success in Lipreading"	John Tracy Clinic, 806 West Adams Blvd., Los Angeles, Calif. 90007 Edgar L. Lowell, Ph.D.	To study the personality and intellectual characteristics associated with success in lipreading, in order to select those who can profit from such training from those who must rely on other means of communication, a vital factor in job success.
66* 1956-1958 $40,581	A Manual for Use by the Community as a Guide for the Establishment of Comprehensive Community Rehabilitation Services for Persons with Communicative Handicaps "Hearing Loss—A Community Loss"	American Hearing Society, 919 18th Street, N.W., Washington, D.C. 20006 Crayton Walker	To develop standards and guides for use by communities in the establishment of speech and hearing facilities for the rehabilitation of the deaf and the hard of hearing.
74* 1956-1957 $7,932	Investigation of the Nature of Test Results in Cases of Inner Hearing Loss	Cleveland Hearing and Speech Center, 11206 Euclid Avenue, Cleveland, Ohio 44106 Earl D. Schubert, Ph.D.	To improve hearing tests commonly used in evaluating speech discrimination in certain types of deafness in order to make more effective job selections.

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
79* 1956-1958 $42,838	A Study of the Conditions Affecting Occupational Competence and Success Among Deaf Adults in the United States "Occupational Conditions Among the Deaf"	National Association of the Deaf, 2025 Eye St., N.W., Washington, D.C. 20006 Byron B. Burnes	To inventory the variety of jobs performed by deaf persons throughout the nation and evaluate factors associated with occupational success or failure.
143* 1957-1960 $29,438	Item Analysis of Discrimination Test "Item Analysis of Discrimination Test"	Cleveland Hearing and Speech Center, 11206 Euclid Ave., Cleveland, Ohio 44106 Earl D. Schubert, Ph.D.	To facilitate rehabilitation of hard of hearing persons by developing an improved test for speech discrimination loss.
150* 1957-1958 $26,894	Speech Reading Teaching Through Television "Teaching Speech Reading Through Television"	HEAR, Incorporated, 221 N. Carroll Street, Madison, Wis. 53703 Mrs. J. D. Stovall	To demonstrate the effectiveness of television as a medium for teaching speech reading to deaf adults.
167* 1958-1960 $89,686	The Relationship Between Audiologic Measures and Actual Social-Psychological-Vocational Disability "The Relationship Between Audiological Measures and Handicap"	University of Pittsburgh, Pittsburgh, Pa. 15213 L. G. Doerfler, Ph.D. J. Matthews, Ph.D.	To investigate in 1,000 hard-of-hearing adults the relationship between audiological test results and social-psychological-vocational measures of disability.
169* 1958-1969 $1,000	Follow-up Study of Female Deaf People	Lexington School for the Deaf, 904 Lexington Avenue, New York, N.Y. 10021 L. E. Connor, Ed.D.	To develop a research design for a follow-up study to explore the effects of educational experience in a school for the deaf on vocational adjustment.

** - Project is completed*

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
292* 1958-1960 $50,431	Rehabilitation of the Hard of Hearing "The Glass Wall" (A Film)	American Hearing Society, 919 18th Street, N.W., Washington, D.C. 20003 Crayton Walker	To develop an educational and informational film to demonstrate improved methods for the rehabilitation of the hard of hearing.
302* 1958-1960 $48,701	Demonstration of the Effectiveness of an Intensive Coordinated Program in Increasing the Number of Hearing-Handicapped Rehabilitants "An Intensive Coordinated Service Program to Increase the Number of Hearing Handicapped Vocational Rehabilitants"	American Hearing Society, 919 18th Street, N.W., Washington, D.C. 20003 Crayton Walker	To demonstrate the effectiveness of an intensive program of coordinated community services for increasing the vocational opportunities of the deaf and hard-of-hearing person.
314* 1959-1961 $21,911	Occupational Adjustment of Hearing-Impaired Persons in Professional, Technical, and Managerial Employment **"The Formidable Peak: A Study of Deaf People in Professional Employment"	Gallaudet College, Washington, D.C. 20002 Alan B. Crammatte	To gather and analyze information on factors which influence successful vocational adjustment in deaf persons engaged in professional occupations.
350* 1958-1959 $6,535	Vocational Rehabilitation Research Areas and Needs in the Fields of Speech and Hearing "Research Needs in Speech Pathology and Audiology"	American Speech and Hearing Association, 9030 Old Georgetown Road, Washington, D.C. 20014 K. O. Johnson, Ph.D.	To define the nature and scope of research needs in vocational rehabilitation in the field of speech and hearing.

** - Project is completed*

*** Published as "Deaf Persons in Professional Employment" by Charles C. Thomas, Publisher, Springfield, Illinois.*

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
361* 1959-1960 $1,191	Evaluation of the Vocational Rehabilitation Needs and Potentials of Marginal Deaf People	Kansas School for the Deaf, Olathe, Kansas 60601 Stanley D. Roth	To plan a study of the effectiveness of a comprehensive adjustment program to promote vocational readiness in deaf persons with previous unsuccessful employment experience.
364* 1960-1961 $16,851	Evaluation of Speech and Hearing Rehabilitation Therapy "Evaluation of Speech and Hearing Rehabilitation Therapy"	Pennsylvania State University, University Park, Pennsylvania 16802 B. M. Siegenthaler, Ph.D.	To evaluate the effects of a specific program of speech and hearing rehabilitation services on the social, psychological, and vocational adjustment of persons who have received such services.
464* 1960-1962 $33,026	Development of a Pictorial Interests Inventory for Use with the Deaf "Report of Construction of a Picture Interest Inventory for the Deaf"	Gallaudet College, Washington, D.C. 20002 Howard L. Roy, Ph.D. Stephen P. Quigley, Ph.D.	To develop and standardize a pictorial interest inventory for use in counseling with the deaf.
466* 1959-1962 $37,008	An Investigation of Certain Aspects of Bone Conduction Audiometry "An Investigation of Certain Aspects of Bone Conduction Audiometry"	University of Oklahoma, Research Institute, Norman, Oklahoma 73069 John W. Keys, Ph.D.	To evaluate the efficiency of bone conduction audiometry used in the rehabilitation of persons with impaired hearing.
467* 1959-1965 $37,862	Analysis of Communicative Structure Patterns in Deaf Children "Analysis of Communicative Structure Patterns in Deaf Children"	Gallaudet College, Washington, D.C. 20002 George E. Detmold, Ph.D.	To study and analyze communicative patterns developed by young deaf persons in order to improve communication techniques in the vocational rehabilitation of the deaf.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
485* 1961-1964 $52,482	Recruitment of Personnel for Training in Hearing Rehabilitation "Recruitment of Personnel for Training in Hearing Rehabilitation"	Boston Guild for the Hard of Hearing, 283 Commonwealth Ave., Boston, Massachusetts 02115 Claire K. Kennedy	To investigate and develop improved methods for increasing the number of specialized rehabilitation personnel who work with the deaf and the hard of hearing.
501* 1960-1962 $93,374	Evaluation, Selection and Fitting of Monaural and Binaural Hearing Aids for Middle and Old Age Hard-of-Hearing Persons	Research Foundation of State of New York, Box 7126, Capitol Station, Albany, N.Y. 12224 Maurice H. Miller, Ph.D.	To evaluate the effectiveness of Binaural hearing aids for persons with hearing loss who are 50 years of age or older.
526* 1960-1963 $62,982	An Investigation to Evaluate the Usefulness of the Visible Speech Cathode Ray Tube Translator as a Supplement to the Oral Method of Teaching Speech to Deaf and Severely Deafened Children "Visible Speech for the Deaf"	Wayne State University Speech and Hearing Clinic, Detroit, Michigan 48202 George A. Kopp, Ph.D. Harriet G. Kopp, Ph.D.	To evaluate the usefulness of the visible speech cathode ray tube as a supplement to the oral method of teaching speech in the rehabilitation of the deaf and the hard of hearing.
549* 1960-1962 $17,917	Thinking Processes Related to Social-Vocational Adjustment and Communication Skills in Deaf Adults "Cognitive Processes in Deaf and Hearing Adolescents and Adults"	Clarke School for the Deaf, Round Hill Rd., Northhampton, Mass. 10160 Solis L. Kates, Ph.D.	To investigate the effect of deafness on the learning process and the relation of learning deficiencies to the social and vocational adjustment of the deaf.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
583* 1960-1961 $14,950	Identification of Researchable Vocational Rehabilitation Problems of the Deaf "Research Needs in the Vocational Rehabilitation of the Deaf"	Gallaudet College, Washington, D.C. 20002 Powrie V. Doctor, Ph.D.	To conduct a conference of selected authorities in the field of deafness for the purpose of identifying researchable problems of the deaf.
601* 1961-1963 $42,080	Vocational Status and Adjustment of Deaf Women "Vocational Status and Adjustment of Deaf Women"	Lexington School for the Deaf, 904 Lexington Avenue, New York, New York 10021 L. E. Connor, Ed.D.	To study the effect of educational experiences on the vocational adjustment of deaf women who have attended a school for the deaf.
642* 1961-1966 $193,048	Counseling Center for the Deaf	Gallaudet College, Washington, D.C. 20002 George E. Detmold, Ph.D.	To establish a counseling center to meet the special counseling and guidance problems of deaf college students.
704* 1961-1964 $30,110	Development of Non-Verbal Concept Learning Tasks for Deaf Adults "Research with the Deaf: Implications for Language and Cognition"	The Catholic University of America, Washington, D.C. 20017 Hans G. Furth, Ph.D.	To develop and standardize nonverbal concept learning tasks for deaf adults minimally influenced by language or past experience with a view toward using such tasks for prediction purposes.
734* 1961-1964 $87,201	The Deaf Study of a Metropolitan Area "The Deaf Community Study of Metropolitan Washington, D.C."	Gallaudet College, Washington, D.C. 20002 Jerome Schein, Ph.D.	To conduct a survey of the deaf population in the Washington metropolitan area in order to analyze how this disability affects vocational and personal adjustment, interests, attitudes, and aspirations in community living.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
781* 1962-1964 $76,672	Development Studies of Deaf Children "Development Studies of Deaf Children"	Clarke School for the Deaf, Northhampton, Mass. 10160 Miriam F. Fiedler, Ph.D.	To study the effects of school experience on the intellectual capacity and personal adjustment of deaf adolescents, giving further insight into the preparation of the deaf for adult vocational life.
800* 1962-1965 $221,107	The Identification and Vocational Training of Institutionalized Retarded Deaf Patients "Identification and Vocational Training of the Institutionalized Deaf Retarded Patient"	Michigan Department of Mental Health, Lewis Cass Building, Lansing, Michigan 48913 Anthony Abruzzo, M.D. V. A. Stehman, M.D.	To identify deaf individuals residing in state institutions for the mentally retarded who appear to have vocational rehabilitation potential, and to develop a comprehensive rehabilitation program to meet their individual needs.
801* 1962-1966 $264,536	A Project to Provide a Personal Adjustment and Pre-Vocational Center for Non-Feasible Deaf Adults "A Personal Adjustment and Pre-Vocational Center for Non-Feasible Deaf Adults and Research to Discover and Establish: 1. Extent to Which Vocational Rehabilitation Can be Achieved, 2. Time Required, and 3. Cost"	Michigan Association for Better Hearing, 724 Abbott Road, E. Lansing, Mich. 48823 Stahl Butler	To establish a specialized comprehensive vocational and academic program which will include personal and social adjustment training as well as development of communication skills, in order to prepare untrained marginal deaf persons for employment.
803* 1962-1963 $11,896	Effect of Sensory-Neural Hearing Loss Upon Sound Localizing Ability "Effect of Sensory-Neural Hearing Loss Upon Sound Localizing Ability"	School of Medicine, University of Pittsburgh, Pennsylvania 15213 Leo G. Doerfler, Ph.D.	To explore the extent to which the ability to localize auditory sounds is impaired by hearing loss that is sensory-neural.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
868* 1961-1962 $21,777	Repertory Theater for the Deaf	World Rehabilitation Fund, Inc., 400 East 34th Street, New York, New York 10016 Eugene J. Taylor	To explore the feasibility of a demonstration which will provide new vocational opportunities for the deaf in the arts and enrich the cultural lives of the deaf.
971* 1962-1967 $190,037	The Establishment of Minimum Hearing and Speech Service Screening Units	American Hearing Society, 919 18th Street, N.W., Washington, D.C. 20006 Crayton Walker	To plan and establish hearing and speech facilities which will provide basic services and serve as screening units whereby more difficult cases may be identified and referred to comprehensive speech and hearing centers.
1007* 1962-1964 $31,340	Development of a Manual of Idioms and Phrases Adapted to the Special Needs of the Deaf "A Dictionary of Idioms for the Deaf"	American School for the Deaf, 139 N. Main Street, West Hartford, Connecticut 06107 Maxine T. Boatner, Ph.D.	To prepare a manual of common idiomatic expressions explained in simple language which can be understood by deaf people 14 years of age or older, in order to improve the communicative skills of the deaf.
1008* 1962-1963 $15,947	Animated Cinefluorographic Films for Speech Rehabilitation in the Aurally Handicapped "Animated Cinefluorographic Films for Speech Rehabilitation in the Aurally Handicapped"	John Tracy Clinic, 806 W. Adams Blvd., Los Angeles, Calif. 90007 Edgar L. Lowell, Ph.D.	To develop cinefluorographic and animated films showing the movements of normal articulation during speech for use in teaching speech to the deaf and hard of hearing.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1012* 1962-1965 $72,384	Interaction of Deaf and Hearing People in Frederick, Maryland "Interaction of Deaf and Hearing People in Frederick, Maryland"	The Catholic University of America, Bureau of Social Research, Wash., D.C. 20017 P. H. Furfey, Ph.D.	To investigate the social and cultural characteristics of the deaf population in Frederick, Maryland, and the social interaction of deaf and hearing people in the community.
1054* 1963-1966 $150,991	A Study to Determine the Effectiveness of a Comprehensive Trade, Technical, and Academic Program for the Rehabilitation of Educable Young Adults with Severe Hearing Loss "Education of Deaf and Hard of Hearing Adults in Established Facilities for the Normally Hearing"	Idaho State University, Pocatello, Idaho 83201 Gwenyth R. Vaughn, Ph.D.	To provide special communication and education assistance to persons with severe hearing losses so that they may attend regular courses in a trade and technical school.
1079* 1963-1964 $9,258	Delayed Feedback Audiometry "Delayed Feedback Audiometry"	University of Oklahoma, Medical Center, 825 Northeast 14th St., Oklahoma City, Oklahoma 73104 John W. Keys, Ph.D.	To develop a reliable method for determining hearing acuity thresholds for pure frequency stimuli in individuals with functional hearing loss.
1097* 1963-1967 $36,072	Social Conceptualization Abilities of the Deaf	Clarke School for the Deaf, Round Hill Rd., Northhampton, Mass. 01060 Solis L. Kates, Ph.D.	To investigate and compare the conceptual abilities required for dealing with social and emotional stimuli in deaf persons and in hearing persons.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1124* 1962-1963 $4,588	Second Conference on Speech Discrimination "Second Conference on Speech Discrimination"	Houston Speech and Hearing Center, Texas Medical Center, 1343 Moursund Avenue, Houston, Texas 77025 Jack L. Bangs, Ph.D.	To conduct a research conference of authorities in auditory discrimination loss in order to explore possible ways of reducing this disability.
1170* 1964-1966 $3,342 (Partial support for National and Region II conferences)	Audiology and Education of the Deaf "Audiology and Education of the Deaf"	American Speech and Hearing Association, 9030 Old Georgetown Road, Washington, D.C. 20014 K. O. Johnson, Ph.D.	To survey methods for promoting increased cooperation among professional persons serving the deaf and to conduct conferences on improving audiological services for the deaf.
1173* 1963-1965 $46,736	Revise and Restandardize a Test for Handicapped "Revision and Restandardization of the Hiskey-Nebraska Test of Learning Aptitudes"	University of Nebraska, Teacher's College, Lincoln, Nebraska 68508 Marshall S. Hiskey, Ph.D.	To revise and restandardize the Hiskey-Nebraska Test of Learning Aptitude, a nonverbal intelligence test designed for the handicapped with communication problems such as deafness.
1197* 1963-1966 $394,212	Clinical Demonstration of Comprehensive Mental Health Services for the Deaf "Comprehensive Mental Health Services for the Deaf"	New York State Psychiatric Institute, 722 W. 168th St., New York, New York 10032 John D. Rainer, M.D. Kenneth Z. Altshuler, M.D.	To demonstrate a method for providing psychiatric services to deaf people on both in-patient and out-patient basis.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1226 1964-1969 $76,628	Perception of Altered Acoustic Stimuli by the Deaf	Ohio State University, Research Foundation, 1314 Kinnear Road, Columbus, Ohio 43212 John W. Black, Ph.D.	To evaluate a newly developed method for assessing residual hearing and sound discrimination ability in disabled persons with impaired hearing.
1295* 1964-1965 $50,840	A Survey of the Occupational Status of the Young Adult Deaf of New England and the Demand for a Regional Technical Center "Occupational Status of the Young Adult of New England and the Need and Demand for a Regional Technical-Vocational Training Center"	American School for the Deaf, 139 N. Main Street, West Hartford, Conn. 06103 Edmund B. Boatner	To determine the need and affective demand for a regional technical training center for the deaf.
1297* 1964-1966 $25,442	Evaluation of Sensorineural Acuity Level (SAL) Test "Comparison of SAL and Bone-Conduction Audiometry in Prediction of Gains for Stapes Surgery" and "Critical Evaluation of SAL Audiometry"	Houston Hearing and Speech Center, Texas Medical Center, 1343 Moursund Ave, Houston, Texas 77025 James Jerger, Ph.D.	To determine the relationship between conventional and recently developed audiometric tests procedures and the applicability of these techniques in predicting results in stapes surgery.
1298* 1964-1965 $56,580	Dictionary of the Language of Signs "A Comprehensive Dictionary of the Language of Signs"	New York University, Washington Square, New York, N.Y. 10003 Edna S. Levine, Ph.D.	To develop a dictionary of the language of signs.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1299 1964-1969 $258,310	Behavioral Aspects of Deafness	Institute for Research on Exceptional Children, University of Illinois, 1003 W. Nevada, Urbana, Illinois 61803 S. P. Quigley, Ph.D.	Research on the behavioral aspects of deafness and the significance of these factors in the rehabilitation of deaf persons.
1304* 1964-1965 $2,872	Integration and Development of Services for the Deaf in a Comprehensive Vocational Evaluation and Work Conditioning Center "Integration and Development of Services for the Deaf in a Comprehensive Vocational Evaluation and Work Conditioning Center"	Morgan Memorial, Inc., 85 Shawmut Avenue, Boston, Mass. 02116 William F. Stearns	To plan a demonstration on the development of services for the deaf in a comprehensive vocational evaluation and work conditioning center.
1305* 1964-1967 $38,835	Temporal and Spatial Parameters in Learning with the Deaf "Spatial and Temporal Factors in Learning with Deaf Children; An Experimental Investigation of Thinking"	The Catholic University of America, Washington, D.C. 20017 James Youniss, Ph.D. Hans G. Furth, Ph.D.	To study the role of stimuli on discrimination and concept learning in the deaf.
1316 1964-1969 $268,714	Auditory Rehabilitation Aspects of Stapes Surgery for Otosclerosis	University of California, Medical Center, Los Angeles, Calif. 90024 Victor Goodhill, M.D.	To study the auditory rehabilitation aspects of stapes surgery for otosclerosis.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1341* 1963-1964 $9,100	Study of Minnesota Program for Secondary Age and Young Adult Hearing-Impaired "A Preliminary Study of Minnesota Program for Secondary Age and Young Adult Hearing-Impaired"	State Department of Education, St. Paul, Minnesota 55101 Thomas J. Mangan	To study the extent to which existing programs within the state meet the rehabilitation needs of the adolescent and young adult hearing-impaired.
1360* 1964-1965 $24,216	Rehabilitation Surgery and Hearing Loss Films: "Restoration of Hearing - Obliteration of the Cavity and Reconstruction of the Auditory Canal in Temporal Bone Surgery"; "Stapedectomy Techniques for Otosclerosis"; "Selecting Patients for Tympanoplasty"; "Tympanoplasty, Part I: Reconstruction of the Tympanic Membrane; Part II: Reconstruction of the Occicular Chain"	University of Texas Graduate School of Biomedical Sciences, 102 Jesse Jones Library Bldg., Houston, Texas 77025 Grant Taylor, M.D.	To provide five 30-minute colored medical teaching films and video tapes on surgical procedures for the correction of hearing loss.
1380* 1964-1967 $81,902	Vocational Development of Deaf Adolescents	Lexington School for the Deaf, 904 Lexington Avenue, New York, N.Y. 10021 Joseph Rosenstein, Ph.D.	To investigate vocational development of deaf adolescents and young adults and to determine the contribution of teachers, parents, and peers to this development.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1440* 1964-1965 $6,084	Adjustment to Auditory Disability in Adolescence "Adjustment to Auditory Disability in Adolescence"	University of Rochester, River Campus Station, Rochester, N.Y. 14627 Emory L. Cowen, Ph.D.	To study adjustment to auditory disability, which completes a unified series of studies on the nature of personal adjustment as it relates to auditory disability and visual disability in adolescence.
1479* 1964-1967 $142,853	Psycholinguistic Processes in the Deaf	Vanderbilt University, Nashville, Tennessee 37203 Jum C. Nunnally, Ph.D.	To study certain aspects of language functioning in the deaf which seem to be related causally with difficulty in using flexible and creative thinking and expression.
1483 1964-1968 $61,221	Visible Speech for the Deaf	Wayne State University, Speech and Hearing Clinic, 4841 Cass Avenue, Detroit, Mich. 48202 George A. Kopp, Ph.D.	To investigate those abilities of deaf people which seem critical for the successful use of visible speech electronic equipment as a training aid for speech improvement.
1484* 1964-1969 $110,700	Cognitive Structures Related to Verbal Deficiency	The Catholic University of America, Washington, D.C. 20017 Hans G. Furth, Ph.D.	To determine how and to what extent nonverbal concept learning contributes to the development of cognition in the deaf and other language-impaired individuals.
1520* 1964-1965 $14,774	Development of Rehabilitation Services for the Deaf in a Comprehensive Facility	Jewish Employment and Vocational Service, 1727 Locust St., St. Louis, Mo. 63103 Harold P. Wolff	A pilot study to investigate the feasibility of providing rehabilitation services to deaf adults within a comprehensive rehabilitation facility.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1526* 1964-1965 $13,824	Facilitation of Verbal Communication Among the Deaf "Verbal Facilitation for the Deaf"	San Fernando Valley State College, 18111 Nordhoff, Northridge, Calif. 91324 Ray L. Jones, Ph.D.	A pilot project to explore potential methods of telephone communication for the deaf.
1575* 1965-1966 $43,029	Eyeglass Display for Aid in Speech Reading	Texas Christian University, Fort Worth, Texas 76129 Claude B. Elam, Ph.D.	To perfect an eyeglass optical projection device which would assist the deaf and hard of hearing in lipreading more accurately.
1576 1965-1968 $127,208	Demonstration of Methods of Serving Deaf Adults in a Comprehensive Vocational Evaluation and Work Conditioning Center	Morgan Memorial, Inc., 95 Berkeley Street, Boston, Mass. 02116 William F. Stearns	To determine how the vocational training of deaf adults can be performed effectively in a comprehensive work-training center established to serve all disability groups.
1627 1965-1968 $169,886	Interaction of Deaf and Hearing Persons in Baltimore, Maryland	The Catholic University of America, Washington, D.C. 20017 Paul H. Furfey, Ph.D. Thomas J. Harte, Ph.D.	To study interactions between deaf and hearing persons in Baltimore, Maryland.
1652* 1964-1965 $40,000	A Study of the Occupational Status of the Young Adult Deaf of the Southwest and Their Need for Specialized Vocational Rehabilitation Facilities "Young Deaf Adults: An Occupational Survey"	Arkansas Rehabilitation Service, 303 Education Bldg., Little Rock, Ark. 72203 Henry Kronenberg, Ph.D.	A pilot project to conduct a survey of occupational status and needs of young deaf adults in six southwestern states.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1687* 1965-1966 $15,000	A Planning Grant to Develop a Directory of American Services for the Deaf "Directory of Services for the Deaf in the United States"	Gallaudet College, Washington, D.C. 20002 Powrie V. Doctor, Ph.D.	A pilot project to develop an Annual Directory of American Services for the Deaf.
1786* 1966-1967 $41,164	Hereditary Deafness in Man	The Johns Hopkins University School of Medicine, Baltimore, Md. 21205 Bruce W. Konigsmark, Ph.D.	To identify and define different types of hereditary deafness in man.
1804 1966-1971 $237,161	A Vocational Rehabilitation Program for the Deaf in a Comprehensive Facility	Jewish Employment and Vocational Service, 1727 Locust St., St. Louis, Mo. 63103 Samuel Bornstein	To demonstrate how the existing resources of a metropolitan vocational training center can be modified to meet the special needs of unemployed deaf adults.
1831* 1966-1967 $14,227	The Use of a Regional Rehabilitation Counseling Facility Specially Designed to Meet the Needs of Deaf Students Attending College as Part of a Student Body with Normal Hearing	Northeastern University, 360 Huntington Ave., Boston, Mass. 02115 George J. Goldin, Ph.D.	To plan the development of a regional counseling facility for deaf students attending college with persons having normal hearing.
1899 1966-1969 $105,147	Delayed Feedback in Audiometry	The Johns Hopkins University School of Medicine, Baltimore, Md. 21205 Richard A. Chase, M.D.	To investigate the effects of delayed auditory feedback of human vocalizations upon the control of speech muscular activity during infancy and early childhood; to develop new clinical techniques and instruments for improved detection and evaluation of hearing loss in pre-school children.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1907* 1966-1967 $41,279	Non-Aural Method of Human Communication "Teaching Vocal Pitch Patterns Using Visual Feedback from the Instantaneous Pitch-Period Indicator for Self-Monitoring"	Northeastern University, 360 Huntington Ave., Boston, Mass. 02115 Ladislav Dolansky, Ph.D.	To investigate the effectiveness of an "instantaneous pitch indicator" and similar instruments for teaching normal speech inflection and rhythm to the deaf.
1932 1966-1969 $200,417	Demonstration of the Feasibility of Providing Rehabilitation Services for the Deaf within a Comprehensive Rehabilitation Center for all the Disabled	Arkansas Rehabilitation Services, 211 Broadway, Little Rock, Ark. 71901 Neal D. Little	To investigate the feasibility of providing rehabilitation services to deaf adults within a comprehensive rehabilitation center.
2036* 1966-1967 $21,560	Establishment of an Evaluation Center for Deafness	DePaul University, 25 East Jackson Blvd., Chicago, Illinois 60604 McCay Vernon, Ph.D.	A pilot project to study the feasibility of establishing a comprehensive metropolitan evaluation center for the deaf.
2050* 1966-1969 $50,700	An Annual Directory of American Services for the Deaf "Directory of Services for the Deaf in the United States"	American Annals of the Deaf, Conference of Executives of American Schools for the Deaf, 7th and Florida Ave., N.E., Washington, D.C. 20002 Powrie V. Doctor, Ph.D.	To provide a comprehensive annual directory of services for the deaf in the United States.
2063* 1966-1967 $15,000	Development and Feasibility Tests of a Visual Speech Trainer for the Deaf "Development and Feasibility Tests of a Visual Speech Trainer for the Deaf"	Gallaudet College, Washington, D.C. 20002 James M. Pickett, Ph.D.	To develop and test the feasibility of a visual speech trainer for the deaf.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
2074* 1966-1968 $78,640	Study of the Establishment of a National Council of Organizations of and for the Deaf	National Health Council, 1790 Broadway, New York, N.Y. 10019 Peter Meek	To study the feasibility of establishing a national council of organizations of and for the deaf
2086* 1966-1967 $14,943	Pilot Program to Develop Means for Greater Utilization of Community Educational and Training Services by Adult Deaf Persons "Pilot Project to Develop Means for Greater Utilization of Community Educational and Training Services by Adult Deaf Persons"	San Fernando Valley State College 18111 Nordhoff St., Northridge, California 91324 Ray L. Jones, Ph.D.	A pilot project to develop means for greater utilization of community educational and training services by adult deaf persons.
2088* 1966-1968 $2,200	Community Resources Institute "Community Organization with the Deaf"	University of Arizona, The Rehabilitation Center, College of Education, Tucson, Arizona 85721 David Wayne Smith, Ph.D.	To develop more community resources for deaf people through greater use of effective deaf leadership.
2128 1966-1969 $202,806	Clinical Demonstration of Rehabilitative and Preventive Psychiatric Programs for the Deaf	Research Foundation for Mental Hygiene, Inc., (Rockland State Hospital) Orangeburg, New York 10962 John D. Rainer, M.D.	To demonstrate the value of halfway house and day care programs for discharged psychiatric deaf patients; develop and test a preventive program; and provide training for professional personnel interested in specialized psychiatric services for the deaf.

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Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
2166 1966-1968 $18,381	Pilot Project to Plan Mental Health Services	Welfare Planning Council Los Angeles Region, 731 S. Hope Street, Los Angeles, Calif. 90017 Robert J. Currie	A pilot project to demonstrate and evaluate various methods of providing mental health services to the adult deaf.
2207 1967-1970 $239,886	A Comparison of Deaf and Hearing Workers in the Aerospace Industry	University of California at Los Angeles, 405 Hilgard Avenue, Los Angeles, Calif. 90024 J.S. Felton, M.D.	A study to compare injury, absence, termination rates and job stability of deaf and hearing workers on similar jobs.
2264 1967-1970 $119,730	Counseling and Community Services for the Deaf	Pittsburgh Hearing Society, 313 Sixth Avenue, Pittsburgh, Penn. 15222 Sam B. Craig	To demonstrate the feasibility and effectiveness of a local hearing society establishing a comprehensive counseling and community referral service for the deaf in a metropolitan area.
2266 1967-1970 $124,776	Promoting Civil Service Employment of the Deaf	D.C. Department of Vocational Rehabilitation, 1331 H. St., N.W., Washington, D.C. 20005 E. P. Benoit, Ph.D.	To develop a broad program to promote the employment of deaf individuals in Civil Service jobs and to enhance their capabilities for promotion.
2276 1967-1969 $46,198	Investigation of the Recruitment Phenomenon in the Hard of Hearing	University of Southern Calif., University Park, Los Angeles, Calif. 90007 V.P. Garwood, Ph.D.	To investigate systematically the abnormal increase of sound in patients with sensory-neural hearing loss which results in their inability to use hearing aids.
2277 1967-1970 $75,282	A Scale for Testing Speech Discrimination	Wayne State University Detroit, Michigan 48202 John H. Gaeth, Ph.D.	To develop improved tests of speech discrimination ability for the hard of hearing.

** - Project is completed*

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
2308 1967-1968 $7,500	Language Development in Deaf Adolescents and Adults	Clarke School for the Deaf, Round Hill Road, Northampton, Mass. 01060 Solis L. Kates, Ph.D.	A pilot project to determine whether deaf adolescents and adults are distinguished from hearing persons in their ability to interpret multiple-meaning words.
2315* 1966-1967 $15,000	Deaf Repertory Theater	Eugene O'Neill Memorial Theater Foundation, 699 Madison Ave., New York, New York 10021 David Hays	A pilot project to explore the feasibility of establishing a permanent non-oral repertory theater as a new vocational field for the deaf as well as for cultural enrichment.
2323 1967-1968 $9,800	The Establishment of an Institute for the Study of Deafness and Communicative Disorders	Michael Reese Hospital and Medical Center, 29th and Ellis Ave., Chicago, Ill. 60616 Ezra Gordon	A pilot project to determine the most desirable and appropriate architectural and acoustical plan for a multi-disciplinary center to serve the deaf and persons with communicative disorders.
2360 1967-1969 $108,944	Teaching of Intonation Patterns to the Deaf Using the Instantaneous Pitch-Period Indicator	Northeastern University, 360 Huntington Avenue, Boston, Mass. 02115 Ladislav Dolansky, Ph.D.	To determine the efficiency of the Instantaneous Pitch-Period Indicator for training the deaf to achieve proper rhythm and intonation patterns of speech.
2401 1967-1968 $10,592	The Audiological Application of Tests of Phonemic Differentiation	University of Oklahoma Medical Center, Department of Communication Disorders, 800 N.E. 13th St., Oklahoma City, Okla. 73104 G.A. Studebaker, Ph.D.	A pilot project to investigate the possibility of developing a more effective test instrument for evaluating hearing aids through specially structured speech tests with emphasis upon phonemic balance.

** - Project is completed*

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
2407 1967-1970 $299,909	Psychiatric Diagnosis Therapy and Research on the Psychotic Deaf	Michael Reese Hospital and Medical Center, 29th and Ellis Ave., Chicago, Ill. 60616 McCay Vernon, Ph.D.	To demonstrate the feasibility of providing psychological, psychiatric and vocational rehabilitation services to the so-called "psychotic deaf."
2408 1967-1968 $15,000	Mental Health Services for the Deaf	California Department of Mental Hygiene, Langley Porter Neuropsychiatric Institute, 401 Parnassus Ave., San Francisco, Calif. 94122 Hilde S. Schlesinger, M.D.	A pilot project to plan the development of a comprehensive community mental health program for the deaf.
2446 1967-1968 $20,000	A Program to Improve and Increase Speech, Hearing and Language Services Throughout the United States	National Association of Hearing and Speech Agencies 919 18th St., N.W. Washington, D.C. 20006 Tom Coleman	A pilot project to demonstrate and evaluate methods for improving and increasing community hearing and speech services.
2453 1967-1970 $202,195	Development of a Pre-Vocational Inventory for the Deaf	Lexington School for the Deaf 904 Lexington Avenue, New York, New York 10021 Alan Lerman, Ph.D.	A project to develop a measure of preferential activities for the deaf, a measure of traits, needs and capacities of the deaf and the standardization of a pre-vocational inventory.
2474 1967-1970 $300,000	Professional Theater for the Deaf	Eugene O'Neill Memorial Theater Foundation, 699 Madison Ave., New York, New York 10021 David Hays	A demonstration of a non-oral repertory theater company as a new vocational field for the deaf.

* - *Project is completed*

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
2481 1967-1972 $500,000	Establishment of a Comprehensive Community Operation Attempting to Resolve the Problems of Deafness	Institute for Study of Exceptional Children and Adults, DePaul University, 25 E. Jackson Blvd., Chicago, Ill. 60604 William D. Phillips, Ph.D. William Gellman, Ph.D.	To establish a comprehensive and unified community service program for the deaf utilizing multidisciplinary and multiagency approaches.
2487 1967-1968 $10,000	International Conference on Oral Education of the Deaf	Clarke School for the Deaf, Round Hill Rd., Northampton, Mass. 10160 George T. Pratt	To hold an international conference on oral education of the deaf.
2552 1967-1970 $170,674	Symbolic and Linguistic Processes in the Deaf	Vanderbilt University, Nashville, Tenn. 37203 Richard Blanton, Ph.D. Jum C. Nunnally, Ph.D.	To produce instructional materials on language acquisition for use with the deaf and investigate related problems affecting the deaf in acquiring language.
2555 1967-1971 $75,000	Language Development in Deaf Adolescents and Adults	Clarke School for the Deaf, Round Hill Rd., Northampton, Mass. 10160 Solis L. Kates, PhD.	To determine whether there are significant distinctions in word association and usage between deaf subjects trained by various teaching methods.
2560 1967-1971 $281,000	Personal and Family Counseling Services for the Adult Deaf	Family Service of Los Angeles 322 W. 21st Street, Los Angeles, Calif. 90007 Yvonne Giroux	A research and demonstration project to study the effectiveness of personal and family counseling in the vocational rehabilitation and adjustment of the adult deaf in Los Angeles County.

** - Project is completed*

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
2573 1967-1970 $64,000	To Implement the Successful Professionalization of the Registry of Interpreters for the Deaf	National Association of the Deaf, 2025 Eye Street, N.W., Washington, D.C. 20006 Frederick C. Schreiber	A project to recruit, train and determine the competence of interpreters for the deaf in order to implement successful professionalization of the Registry of Interpreters for the Deaf.
2575 1967-1971 $128,000	Measurement of Acoustic Parameters for Speech Compression Transposition	Pennsylvania State University Speech and Hearing Clinic, University Park, Pa. 16802 George S. Haspiel, Ph.D.	To determine the specific acoustic parameters to be controlled in speech compression and spectrum shifting for optimum speech discrimination by the hearing-impaired adult.
2606 1967-1969 $53,213	Development of Standardized Interviews for Assessing Attitudes of Industry Hiring Personnel Toward Employment of Deaf Applicants	Alexander Graham Bell Association for the Deaf, Inc., 1537 35th Street, N.W., Washington, D.C. 20007 George W. Fellendorf	To develop and pre-test standardized interview instruments for assessing attitudes of industry hiring personnel toward employment of deaf individuals.
2643 1967-1968 $75,000	International Research Seminar on the Vocational Rehabilitation of Deaf Persons	National Association of the Deaf 2025 Eye Street, N.W., Washington, D.C. 20006 Robert G. Sanderson	To facilitate interchange in rehabilitation research experience among leaders in rehabilitation service to deaf people both in other countries of the world and in the United States.
Special Purpose Supplement to 1804 March 22-24, 1967 $7,575	Conference on Guidelines for Facility Adaptations "Patterns for Effective Rehabilitation of Deaf Adults" — An Introductory Guide	Jewish Employment and Vocational Service, 1727 Locust St., St. Louis, Mo. 63103 Harry Kaufer	To stimulate and encourage new and ongoing efforts in providing more and better rehabilitation services for severely handicapped deaf people — in synthesis of developing research findings.

* - *Project is completed*

SOCIAL AND REHABILITATION SERVICE RESEARCH AND DEMONSTRATION PROJECTS FOR THE DEAF-BLIND

(Pages 35, 36)

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
96* 1956-1958 $60,247	Study and Development of a Manual on Rehabilitation Services for the Deaf-Blind "Rehabilitation of Deaf-Blind Persons: Vol. I - A Manual for Professional Workers; Vol. II - Communication—A Key to Services for Deaf-Blind Men and Women; Vol. III - Report of Medical Studies on Deaf-Blind Persons; Vol. IV - Report of Psychological Studies with Deaf-Blind Persons; Vol. V - Studies in the Vocational Adjustment of Deaf-Blind Adults; Vol. VI - Recreation Services for Deaf-Blind Persons; Vol. VII - Survey of Selected Characteristics of Deaf-Blind Adults in New York State—Fall 1957"	Industrial Home for the Blind, 57 Willoughby St., Brooklyn, New York 11201 George E. Keane	To define successful methods used in the rehabilitation of the deaf-blind and to develop a manual and guide which can be used nationally in setting up rehabilitation services and identifying job opportunities for the deaf-blind.
315* 1958-1961 $115,974	Demonstration of a Pilot Program of Speech and Aural Rehabilitation Services for Hard-of-Hearing-Blind Persons "Auditory Rehabilitation for Hearing-Impaired Blind Persons"	Industrial Home for the Blind, 57 Willoughby St., Brooklyn, New York 11201 George E. Keane	To identify the travel and vocational problems of hard-of-hearing-blind persons and develop a pilot program of aural rehabilitation services for this group.

* - *Project is completed*

Grant Number Years in Operation Cost	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
1004 1962-1968 $396,594	Regional Rehabilitation Services for Deaf-Blind Adults	Industrial Home for the Blind, 57 Willoughby St., Brooklyn, N.Y. 11201 Peter J. Salmon	To establish a regional rehabilitation service program for deaf-blind persons.
2576 1968-1969 $90,000	A National Rehabilitation Service for Deaf-Blind Adults	Industrial Home for the Blind, 57 Willoughby St., Brooklyn, N.Y. 11201 Peter J. Salmon	A project to make rehabilitation services available to deaf-blind adults, stimulate local and State interest in rehabilitating and resettling the deaf-blind in their home communities, and devise and disseminate information about ways for servicing the deaf-blind.

* - *Project is completed*

SOCIAL AND REHABILITATION SERVICE GRANTEE AGENCIES OF RESEARCH AND DEMONSTRATION PROJECTS CONCERNING DEAFNESS

Alphabetically Listed

Agency	Project Number
Alexander Graham Bell Association for the Deaf, Inc.	2606
American Annals of the Deaf and Conference of Executives of American Schools for the Deaf	2050
American Hearing Society	66, 292, 302, 971
American School for the Deaf	1007, 1295
American Speech and Hearing Association	350, 1170
Arizona, University of, The Rehabilitation Center	2088
Arkansas Rehabilitation Service	1652, 1932
Boston Guild for the Hard of Hearing	485
California Department of Mental Hygiene, Langley Porter Neuropsychiatric Institute	2408
California University Medical Center, Los Angeles	1316, 2207
Catholic University of America	704, 1012, 1305, 1484, 1627
Clarke School for the Deaf	549, 781, 1097, 2308, 2487, 2555
Cleveland Hearing and Speech Center	74, 143
DePaul University	2036
DePaul University, Institute for Study of Exceptional Children and Adults	2481
District of Columbia Department of Vocational Rehabilitation	2266
Eugene O'Neill Memorial Theater Foundation	2315, 2474
Family Service of Los Angeles	2560
Gallaudet College	314, 464, 467, 583, 642, 734, 1687, 2063
HEAR, Incorporated	150
Houston Speech and Hearing Center	1124, 1297
Idaho State University	1054
Illinois, University of, Institute for Research on Exceptional Children, Urbana	1299
*Industrial Home for the Blind	96, 315, 1004, 2576
Jewish Employment and Vocational Service, St. Louis	1520, 1804
John Tracy Clinic	29, 1008
Johns Hopkins University School of Medicine	1786, 1899
Kansas School for the Deaf	361
Lexington School for the Deaf	169, 601, 1380, 2453
Michael Reese Hospital and Medical Center	2323, 2407
Michigan Association for Better Hearing	801
Michigan Department of Mental Health	800

* Deaf-Blind

Agency	Project Number
Minnesota State Department of Education	1341
Morgan Memorial, Inc.	1304, 1576
National Association of Hearing and Speech Agencies	2446
National Association for the Deaf	79, 2573, 2643
National Health Council	2074
Nebraska, University of, Teacher's College	1173
New York State Psychiatric Institute	7, 1197
New York University	1298
Northeastern University	1831, 1907, 2360
Ohio State University, Research Foundation	1226
Oklahoma, University of, Medical Center, Oklahoma City	1079, 2401
Oklahoma, University of, Research Institute, Norman	466
Pennsylvania State University	364
Pennsylvania State University, Speech and Hearing Clinic	2575
Pittsburgh Hearing Society	2264
Pittsburgh, University of, School of Medicine	803, 167
Research Foundation for Mental Hygiene, Inc., Rockland State Hospital, Orangeburg, New York	2128
Research Foundation of State of New York	501
Rochester, University of	1440
San Fernando Valley State College	1526, 2086
Southern California, University of	2276
Texas Christian University	1575
Texas, University of, Graduate School of Biomedical Sciences, Houston	1360
Vanderbilt University	1479, 2552
Wayne State University, Speech and Hearing Clinic	526, 1483, 2277
Welfare Planning Council, Los Angeles Region	2166
World Rehabilitation Fund, Inc.	868

PROJECT DIRECTORS OF SOCIAL AND REHABILITATION SERVICE RESEARCH AND DEMONSTRATION GRANT PROGRAMS CONCERNING DEAFNESS

Alphabetically Listed

Projector Director	Project No.	Grant Award
Abruzzo, Anthony, M.D.	*800	$ 221,107
Altshuler, Kenneth Z., M.D.	*1197	394,212
Bangs, Jack L., Ph.D.	1124	4,588
Benoit, E. P., Ph.D.	2266	124,776
Black, John W., Ph.D.	1226	76,628
Blanton, Richard, Ph.D.	*2552	170,674
Boatner, Edmund B.	1295	50,840
Boatner, Maxine, Ph.D.	1007	31,340
Bornstein, Samuel	1804	237,161
Burnes, Byron B.	79	42,838
Butler, Stahl	801	264,536
Chase, Richard A., M.D.	1899	105,147
Coleman, Tom	2446	20,000
Connor, L. E., Ed.D.	169	1,000
	601	42,080
Cowen, Emory L., Ph.D.	1440	6,084
Craig, Sam B.	2264	119,730
Crammatte, Alan B.	314	21,911
Currie, Robert J.	2166	18,381
Detmold, George, Ph.D.	467	37,862
	642	193,048
Doctor, Powrie V., Ph.D.	583	14,950
	1687	15,000
	2050	50,700
Doerfler, L. G., Ph.D.	*167	89,686
	803	11,896
Dolansky, Ladislav, Ph.D.	1907	41,279
	2360	108,944
Elam, Claude B., Ph.D.	1575	43,029
Fellendorf, George W.	2606	53,213
Felton, J. S., M.D.	2207	239,886
Fiedler, Miriam F., Ph.D.	781	76,672
Furfey, P. H., Ph.D.	1012	72,384
	*1627	169,886
Furth, Hans G., Ph.D.	704	30,110
	*1305	38,835
	1484	110,700
Gaeth, John H., Ph.D.	2277	75,282
Garwood, V. P., Ph.D.	2276	46,198
Gellman, William, Ph.D.	*2481	500,000
Giroux, Yvonne	2560	281,000

*Co-Director

Project Director	Project No.		Grant Award
Goldin, George J., Ph.D.	1831		1[illegible],227
Goodhill, Victor, M.D.	1316		268,714
Gordon, Ezra	2323		9,800
Harte, Thomas J., Ph.D.	*1627	(see Furfey)	
Haspiel, George S., Ph.D.	2575		128,000
Hays, David	2315		15,000
	2474		300,000
Hiskey, Marshall S., Ph.D.	1173		46,736
Jerger, James, Ph.D.	1297		25,422
Johnson, K. O., Ph.D.	350		6,535
	1170		3,342
Jones, Ray L., Ph.D.	1526		13,824
	2086		14,943
Kallman, Franz J., M.D.	7		507,505
Kates, Solis L., Ph.D.	549		17,917
	1097		36,072
	2308		7,500
	2555		75,000
Kennedy, Claire K.	485		52,482
Keys, John W., Ph.D.	466		37,008
	1079		9,258
Konigsmark, Bruce W., M.D.	1786		41,164
Kopp, George A., Ph.D.	*526		62,982
	1483		61,221
Kopp, Harriet G., Ph.D.	*526	(see G. Kopp)	
Kronenberg, Henry, Ph.D.	1652		40,000
Lerman, Alan, Ph.D.	2453		202,195
Levine, Edna S., Ph.D.	1298		56,580
Little, Neal D.	1932		200,417
Lowell, Edgar L., Ph.D.	29		59,194
	1008		15,947
Mangan, Thomas J.	1341		9,100
Matthews, J., Ph.D.	*167	(see Doerfler)	
Meek, Peter	2074		78,640
Miller, Maurice H., Ph.D.	501		93,374
Nunnally, Jum C., Ph.D.	1479		142,853
	*2552	(see Blanton)	
Phillips, William D., Ph.D.	*2481	(see Gellman)	
Pickett, James M., Ph.D.	2063		15,000
Pratt, George T.	2487		10,000
Quigley, Stephen P., Ph.D.	*464		33,026
	1299		258,310
Rainer, John D., M.D.	*1197	(see Altshuler)	
	2128		202,806
Rosenstein, Joseph, Ph.D.	1380		81,902
Roth, Stanley D.	361		1,191
Roy, Howard L., Ph.D.	*464	(see Quigley)	
Sanderson, Robert G.	2643		75,000

*Co-Director

Project Director	Project No.		Grant Award
Schein, Jerome, Ph.D.	734		$ 87,201
Schlesinger, Hilde S., M.D.	2408		15,000
Schreiber, Frederick C.	2573		64,000
Schubert, Earl D., Ph.D.	74		7,932
	143		29,438
Siegenthaler, B. M., Ph.D.	364		16,851
Smith, David Wayne, Ph.D.	2088		2,200
Stearns, William F.	1304		2,872
	1576		127,208
Stehman, V. A., M.D.	*800	(see Abruzzo)	
Stovall, J. D. (Mrs.)	150		26,894
Studebaker, G. A., Ph.D.	2401		10,592
Taylor, Eugene J.	868		21,777
Taylor, Grant, M.D.	1360		24,216
Vaughn, Gwenyth R., Ph.D.	1054		150,991
Vernon, McCay, Ph.D.	2036		21,560
	2407		299,909
Walker, Crayton	66		40,581
	292		50,431
	302		48,701
	971		190,037
Wolff, Harold P.	1520		14,774
Youniss, James, Ph.D.	*1305	(see Furth)	
		Total	$8,836,945

PROJECT DIRECTORS OF SOCIAL AND REHABILITATION SERVICE RESEARCH AND DEMONSTRATION GRANT PROGRAMS CONCERNING THE DEAF-BLIND

Alphabetically Listed

Project Director	Project No.		Grant Award
Keane, George E.	96		$ 60,247
	315		115,974
Salmon, Peter J.	1004		396,594
	2576		90,000
		Total	$ 662,815

*Co-Director

PROJECT DIRECTORS OF SOCIAL AND REHABILITATION SERVICE INTERNATIONAL RESEARCH AND DEMONSTRATION GRANT PROGRAMS CONCERNING DEAFNESS

Alphabetically Listed

Project Director	Project No.	Grant Award
Abdel-Ghaffar, Ali	U.A.R.-8	66,050 Egyptian Pounds ($118,880 - equivalent)
Butt, M. Y.	Pakistan-11	217,100 Pakistan Rupees ($ 45,633 - equivalent)
Guberina, Petar	Yugo-2	1,066,652 Yugo Dinars ($ 85,332 - equivalent)
Kapur, Y. P., M.D.	India-26	510,824 Indian Rupees ($ 67,214 - equivalent)
Misra, S. D.	India-14	187,099 Indian Rupees ($ 24,920 - equivalent)
Sade-Sadowsky, N., M.D.	Israel-24	303,300 Israeli Pounds ($101,100 - equivalent)
Schlesinger, I. M., Ph.D.	Israel-32	230,029 Israeli Pounds ($ 76,676 - equivalent)
Vukotic, Dragoljub	Yugo-7	2,000,964 New Dinars ($237,120 - equivalent)
	Total	$756,875

Grand Total $10,256,635

LONG-TERM PROFESSIONAL TRAINING PROGRAMS IN THE AREA OF DEAFNESS
REHABILITATION SERVICES ADMINISTRATION

In 1967, the Rehabilitation Services Administration was supporting six long-term training programs in deafness rehabilitation and 45 traineeships were granted to persons interested in working with deaf people. Four of these programs are on the graduate level and lead to a master's degree, certification, or the doctorate. The other two are nondegree short-term training programs in orientation to deafness rehabilitation.

Training curriculum in deafness rehabilitation is centered around the psychosocial problems of deaf people, the pathology of deafness, communication disorders, the vocational rehabilitation of the deaf, community service, instruction in manual communication, and practicum in service to deaf people. Graduates of these programs who may be vocational rehabilitation counselors, social workers, speech pathologists, audiologists, and psychiatrists, are badly needed in ongoing public and private programs for deaf people and to fill future program needs.

Annually, 15 persons, five of whom may be deaf persons, are selected for participation in a special leadership training program for intensive demonstration of service to deaf people. These persons who are carefully screened for strong background experience in work with deaf people receive important administrative training that prepares them for responsible posts in a growing number of special programs for deaf people.

A national training program in manual communication, begun in 1967, will develop standards and guidelines for community-sponsored courses that will provide effective instruction for people who work with the deaf and for parents and families of deaf people.

REHABILITATION SERVICES ADMINISTRATION PROFESSIONAL TRAINING PROGRAMS IN THE AREA OF DEAFNESS (Pages 44-50)

Grant Number Title Starting Date Number of Years in Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Short-Term Training Programs Conducted Under Grant
6-T-58 Orientation of the Deaf September 1, 1957 5 $64,286	Gallaudet College, Department of Education, Washington, D.C. 20002 George Detmold, Ph.D.	A course in rehabilitation of the deaf for personnel in rehabilitation and related fields. (I)	
279-T-61 Deafness Speech and Hearing Publications, Inc. March 27, 1961 1 $7,100	American Speech and Hearing Association, 1001 Connecticut Ave., N.W., Washington, D.C. 20006 Jerome D. Schein, Ph.D.	This quarterly publication brings to the attention of professional readers the world's literature on deafness, speech and hearing, in brief, noncritical summaries. (I)	
336-T-62 Rehabilitation of the Deaf September 1, 1962 6 $633,426	San Fernando Valley State College, Northridge, Calif. 91324 Ray L. Jones, Ed.D.	This two semester graduate program is designed to provide special school and public administration training for persons experienced in working with deaf people. A major emphasis is given to programs of administrative internship, experimentation, and to the development of new programs for the deaf. Trainees who meet the college entrance requirements can	1) The Adult Deaf (see p. 60) 2) Conference - Interpreters and Instructors of Adult Education for Deaf (see p. 61) 3) Evaluation of the Adult Deaf (see p. 62) 4) Leadership Opportunities for the Adult Deaf (see p. 62) 5) Conference on Increased Educational Opportunities for Adult

Program Type: I, Nondegree; II, Master's; III, Postmaster's; IV, Master's and Postmaster's

Grant Number Title Starting Date Number of Years in Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Short-Term Training Programs Conducted Under Grant
336-T-62 (Continued)		earn the Master of Arts degree with a specialization in School Administration. (II)	Deaf (see p. 62) 6) Conference on Leadership Needs in the Deaf Community (see p. 63) 7) Deaf Community Class - Sensitivity Training (see p. 65) 8) Manual Communication Class (see p. 65) 9) Leadership Conference for Officers of the California Association for the Deaf (see p. 66) 10) Sensitivity Training Class (see p. 67) 11) Conference for Interpreters (see p. 67) 12) Conference of Teachers and Interpreters in Adult Education Classes for the Deaf (see p. 73) 13) Training Conference for Region IX Rehabilitation Counselors for the Deaf (see p. 73) 14) Interpreter's Conference (see p. 74) 15) Interpreter's Class (see p. 74) 16) Training Conference for Region IX Rehabilitation Counselors for the Deaf (see p. 79)

Program Type: I, Nondegree; II, Master's; III, Postmaster's; IV, Master's and Postmaster's

Grant Number Title Starting Date Number of Years in Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Short-Term Training Programs Conducted Under Grant
336-T-62 (Continued)			17) Interpreting in the Legal Setting (see p. 79) 18) Class "Interpreting in the Rehabilitation Setting" (see p. 79) 19) "Total Immersion" - Introduction to Sign Language (see p. 79)
343-T-62 Rehabilitation Counseling April 1, 1962 6 $464,401	University of Arizona, Tucson, Arizona 85721 David Wayne Smith, Ph.D.	A pre-service program in rehabilitation counseling for persons who wish to specialize with the deaf. (IV)	
345-T-62 Residential Child Care Program July 1, 1962 4 $11,260	University of California School of Social Welfare, Berkeley, Calif. 94720 Herbert H. Liekowitz, Ph.D.	To train counselors in residential schools for the deaf and for the blind. (II)	
396-T-63 Audiocommunicative Disability September 1, 1962 4 $261,666	New York University, New York, N.Y. 10003 Edna S. Levine, Ph.D.	A graduate program of professional training in the area of audio-communication disability. (IV)	

Program Type: I, Nondegree; II, Master's; III, Postmaster's; IV, Master's and Postmaster's

Grant Number Title Starting Date Number of Years in Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Short-Term Training Programs Conducted Under Grant
404-T-63 International Congress on Education of the Deaf June 22, 1963 1 $49,263	Gallaudet College, Washington, D.C. 20002 Powrie V. Doctor, Ph.D.	To present a program showing the most modern methods and scientific techniques in education and rehabilitation of the deaf. (I)	1) Workshop for Lutherans on Deafness and Rehabilitation. (see p. 62)
408-T-63 Counseling the Deaf March 1, 1963 5 $164,491	Oregon College of Education, Monmouth, Oregon 97361 Betty Phillips Holdt, M.A. William N. Craig, Ph.D. (1963-1964)	A training program for counselors working with the deaf designed to meet the particular need of vocational counselors and other professional personnel who work with profoundly deaf adults. (I)	
410-T-63 Workshops on Hearing Loss March 1, 1963 5 $354,402	National Association of Speech and Hearing Agencies, 919 18th Street, N.W., Washington, D.C. 20006 Edgar B. Porter	To update knowledge and skills of personnel engaged in community hearing and speech service agencies in the areas of planning, development and administration; to decrease the time lag between the acquisition of new knowledge and techniques in the areas of hearing and speech and their effective application in every day practice; to enable the professional staff of community speech and hearing centers, of other	

Program Type: I, Nondegree; II, Master's; III, Postmaster's; IV, Master's and Postmaster's

Grant Number Title Starting Date Number of Years in Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Short-Term Training Programs Conducted Under Grant
410-T-63 (Cont.)		NAHSA member agencies and affiliates and representatives of related community agencies to engage in short-term workshops designed to improve community services and programming. (I)	
412-T-63 Counseling for the Deaf and Hard of Hearing April 1, 1963 5 $340,735	The University of Tennessee, Knoxville, Tennessee 37916 William Woodrick, M.A. Glenn T. Lloyd, M.S. (1964-1966) Norman Tully, M.A. (1963)	To provide communication and counseling techniques for persons working with the deaf and the hard of hearing. (I)	1) Workshop for Baptists on Deafness and Rehabilitation. (see p. 67) 2) Proceedings of a National Workshop on Improved Opportunities for the Deaf. (see p. 64)
484-T-64 Training Program for Specialized Personnel to Work with Deaf People January 1, 1964 4 $157,090	University of Illinois, Urbana, Illinois 61803 Stephen P. Quigley, Ph.D.	To provide training on the problems of deafness for persons preparing to be rehabilitation counselors, audiologists, speech pathologists, and for persons preparing to work in research, college teaching, or administration in the area of the deaf. (IV)	1) Orienting Audiological Personnel about the Deaf, Regions V and VI. (see p. 65) 2) Research on Behavioral Aspects of Deafness. (see p. 61) 3) Interpreting for Deaf People. (see p. 67) 4) Casework Standards for the Deaf. (see p. 71) 5) The Vocational Rehabilitation of Deaf People. (see p. 71)

Program Type: I, Nondegree; II, Master's; III, Postmaster's; IV, Master's and Postmaster's

Grant Number Title Starting Date Number of Years in Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Short-Term Training Programs Conducted Under Grant
557-T-65 Audiology and Education of the Deaf June 1, 1965 2 $54,224	American Speech and Hearing Association, 9030 Old Georgetown Road, Washington, D.C. 20014 William E. Castle, Ph.D.	A three-year training program consisting of a number of projects on audiology and the education of the deaf. (I)	1) National and Regional Conferences on Audiology and Education of the Deaf, Region I, III, IV, V, VI, VII, VIII, and IX. (see p.68)
576-T-66 Preparing Specialists to Work with the Deaf September 1, 1965 2 $65,854	DePaul University, Chicago, Illinois 60604 William D. Phillips, Ed.D.	To initiate a comprehensive training program directing the service and research skills of specialists in various disciplines to the human problems caused by profound hearing loss. (I, IV)	1) Planning meeting for a national workshop on development of guidelines for the establishment of vocational rehabilitation services for multiply-handicapped deaf people. (see p. 80)
592-T-66 Rehabilitation of the Deaf December 1, 1965 2 $86,743	University of Pittsburgh, Pittsburgh, Pa. 15213 Joseph Newman, Ph.D.	For graduate study intended to provide students who have completed their basic professional preparation an opportunity to develop a major emphasis in the area of the deaf and hard of hearing. (IV)	1) Rehabilitation of the Deaf: Threshold of Innovation. (see p. 80) 2) New Vistas for Competitive Employment of Deaf Persons. (see p. 80)
682-T-67 Training Course for Adult Deaf Drivers June 1, 1967 1 $5,950	University of Denver, Denver, Colorado 80210 Sherman G. Finesilver, L.L.B.	To re-educate adult deaf drivers in regard to safety and accident prevention techniques and to aid in raising the public image of the deaf throughout the United States. (I)	

Program Type: I, Nondegree; II, Master's; III, Postmaster's; IV, Master's and Postmaster's

Grant Number Title Starting Date Number of Years in Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Short-Term Training Programs Conducted Under Grant
683-T-67 Orientation to Deafness June 1, 1967 1 $17,000	Gallaudet College, Washington, D.C. 20002 George Detmold, Ph.D.	To provide incoming members of the faculty and staff a fluency in manual communication and knowledgeableness about deafness that will be necessary in teaching deaf students. (I)	

Program Type: I, Nondegree; II, Master's; III, Postmaster's; IV, Master's and Postmaster's

REHABILITATION SERVICES ADMINISTRATION
LONG-TERM TRAINING PROGRAMS IN DEAFNESS ENROLLMENT

Grantee School	Doctoral (Current)	Doctoral (Earned)	6th year (Current)	6th year (Earned)	Masters (Current)	Masters (Earned)	Nondegree	Total Enrollment
DePaul University					2		7	12
New York University Rehabilitation Research and Training Center for the Deaf	22	3	1	1	5	12		44
Oregon College of Education							116	116
San Fernando Valley State College						71		74
University of Arizona	5				4			9
University of Illinois		3		1				5
University of Pittsburgh	6			2	1	1		10
University of Tennessee							88	88

REHABILITATION SERVICES ADMINISTRATION LONG-TERM PROFESSIONAL TRAINING PROGRAMS IN THE AREA OF DEAFNESS GRANT FUNDS BY FISCAL YEAR

Grant No.	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	Total
6	$10,660	$15,000	$11,750	$16,626	$10,250	$	$	$	$	$	$ 93,451*
279				3,520	3,580						7,100
336					72,942	76,214	90,369	129,988	128,239	135,674	633,426
343					10,995	64,550	87,629	85,887	127,241	165,460	541,762
345					3,200	3,200	3,060	1,800			11,260
396						44,477	64,756	70,197	82,236		261,666
404						49,263					49,263
408						11,134	31,206	32,110	45,283	44,758	164,491
410						45,100	63,667	62,500	83,780	99,355	354,402
412						69,662	8,759	116,922	71,698	73,694	340,735
484							12,978	69,296	46,450	28,366	157,090
557								40,954		13,270	54,224
576									16,546	49,308	65,854
592									15,836	70,907	86,743
682										5,950	5,950
683										17,000	17,000

Grand Total.........$2,844,417

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*Includes three grants totaling $31,165 for fiscal years 1955, 1956, 1957

SHORT-TERM TRAINING PROGRAMS IN THE AREA OF DEAFNESS, REHABILITATION SERVICES ADMINISTRATION

In 1967, approximately 1,150 persons participated in short-term training courses in the area of deafness, supported in part by the Rehabilitation Services Administration. Courses in manual communication sponsored mainly by State associations of the deaf were attended by upwards of 700 persons. Short-term training programs that took place in 1967 were typical of courses sponsored annually since 1958 by universities, schools for the deaf, and agencies concerned with deafness. Topics related to: job placement of deaf persons; guidelines for mental health services to deaf persons; coordination of educational and vocational rehabilitation services for the deaf; the use of media in rehabilitation of severely handicapped deaf people; and guidelines in rehabilitation service to severely handicapped deaf persons.

Short-term training programs in deafness may be divided into five categories. They are: 1) Standards and Guidelines, 2) Technical Abilities, 3) Orientation, 4) Community Development, and 5) Facility Development.

Short-term training programs in *standards and guidelines* have been important instruments in the development of service techniques to meet the special needs of deaf people. A workshop to develop case service standards for vocational rehabilitation counselors who work with deaf people is an example. The report of this workshop is providing counselors with needed guidelines in their frequently difficult work with deaf people.

The Registry of Interpreters for the Deaf was established at a *technical abilities* workshop. Three subsequent workshops in interpreting service identified training and certification standards for interpreters and a manual on interpreting was produced.

Orientation workshops have been used to provide training in vocational rehabilitation of deaf people to vocational rehabilitation counselors, social workers, psychologists, educators, audiologists and speech pathologists and church workers who serve the deaf. The latter, who have a close community relationship with deaf people, are in an excellent position to refer them to State vocational rehabilitation agencies and to assist counselors in serving them.

A short-term training program in *community development* laid the seed for the Council of Organizations Serving the Deaf, a research project which is helping to focus national attention on the service needs of deaf people.

Short-term training programs in *facility development* have produced guidelines for the establishment of various types of service programs for deaf people, including plant specifications, staff requirements, equipment, and curriculum standards.

Short-term training programs have been important meeting grounds for professional and lay persons who serve deaf people or are concerned with deafness. The Professional Rehabilitation Workers with the Adult Deaf organization was born at a workshop. Members who are vocational rehabilitation counselors, social workers, teachers, psychologists, psychiatrists, speech pathologists, audiologists, and church workers, now meet annually in convention where further training and program needs are identified and stimulated.

Additionally, workshops provide deaf people with opportunity to work alongside hearing people in a professional environment that stimulates responsiveness and leadership growth.

REHABILITATION SERVICES ADMINISTRATION SHORT-TERM TRAINING PROGRAMS IN DEAFNESS (Pages 55-80)

Program Description Key: I, Standards and Guidelines; II, Technical Abilities; III, Orientation; IV, Community Development; V, Facility Development

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
57-118 Personal, Social and Vocational Adjustment to Total Deafness October 21-25, 1957 $9,250	New York School for the Deaf, 555 Knollwood Road, White Plains, N.Y. 10603 Daniel T. Cloud	To promote better understanding and counseling of the adult deaf of the nation. (III)	"Institute on Personal, Social, and Vocational Adjustment to Total Deafness"
57-129 Special Problems of the Deaf and the Hard of Hearing June 20-July 31, 1957 $585	American Hearing Society, 1800 H. Street, N.W., Washington, D.C. 20006 Crayton Walker	To produce for distribution copies of the syllabus on "Special Problems of the Deaf and Hard of Hearing." (III)	"Hearing Loss.... A Community Loss"
58-64 The Rehabilitation of Adults with Language and Auditory Disorders July 14-26, 1958 $5,572	University of Wisconsin, Madison, Wisconsin 53706 John V. Irwin	To provide training for practicing speech therapists, enabling them to work more effectively with adults having language and auditory disorders. (II)	
58-89 Personal, Social and Vocational Adjustment to Total Deafness November 17-21, 1958 $8,318	National Association of the Deaf, 2025 Eye St., N.W., Washington, D.C. 20006 Elwood A. Stevenson	To orient rehabilitation and related workers on the effect deafness has upon an individual—personally, socially, and vocationally. (III)	"West Coast Regional Institute on Personal, Social and Vocational Adjustment to Total Deafness"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
59-29 Institute on Rehabilitation Training on Speech and Hearing Therapy March 13-14, 1959 $10,080	American Speech and Hearing Association, 9030 Old Georgetown Rd., Washington, D.C. 20014 Paul LaBenz	To bring together representatives of schools of speech and hearing receiving OVR training grants, etc., to discuss selection of trainees, objectives of training, and curriculum content. (I)	
59-89 Psychological Assessment of the Deaf November 9-14, 1959 $6,831	The Catholic University of America, Washington, D.C. 20017 John F. Kinnane, Ph.D.	To equip a selected group of professional psychologists to work more effectively with the deaf. (III)	
59-92 Tri-Regional Short Course on Vocational Rehabilitation for Hearing and Speech Persons September 14-19, 1959 $6,835	University of Georgia, Athens, Georgia 30601 Harold L. Luper, Ph.D.	To increase the understanding of the total effect of hearing and speech handicaps upon adults. (III)	"Vocational Rehabilitation for Persons with Hearing and Speech Handicaps"
59-105 Workshop to Develop Guidelines for the Establishment of Rehabilitation Facilities for the Deaf October 12-15, 1959 $8,370	Maryland School for the Deaf, Frederick, Maryland 21701 Lloyd A. Ambrosen	To develop guidelines for the establishment and operation of rehabilitation facilities for the deaf. (V)	"Guidelines for the Establishment of Rehabilitation Facilities for the Deaf"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
60-36 Conference on Hearing Conservation May 18-19, 1959 $2,000	American Academy of Ophthalmology and Otolaryngology, 15 Second Street, S.W., Rochester, Minnesota 55901 Alvin E. Harvel	To provide part of the cost of editing, publishing, and distributing of the proceedings of the Conference on Hearing Conservation. (II)	"Health Aspects of Hearing Conservation"
60-54 Rehabilitation Counseling of Deaf Persons February 8-10, 1960 $2,250	Municipal University of Omaha, Omaha, Neb. 68132 Milo Bail, Ph.D.	To provide training in rehabilitation counseling of deaf persons. (III)	"Rehabilitation of the Deaf"
60-80 Psychological Aspects of Deafness May 1-7, 1960 $6,948	The Catholic University of America, Washington, D.C. 20017 John F. Kinnane, Ph.D.	To provide training in psychological assessments of deaf persons. (II)	
60-198 Interpreting for the Deaf January 28-29, 1965 $2,000	The Catholic University of America, Washington, D.C. 20017 Hans Furth, Ph.D.	To develop guidelines and methodology for training interpreters and translators for deaf people and to implement a training program. (II)	"Proceedings of a Follow-up Workshop on Interpreting for the Deaf"
61-22 Orientation of Audiologists to the Deaf February 20-24, 1961 $6,815	Gallaudet College, Washington, D.C. 20002 Robert Frisina, Ph.D.	To provide training for audiologists, on the audiological, psychological, educational and vocational aspects of deafness. (II)	"The Meaning of Deafness"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
61-49 Community Development through Organizations of and for the Deaf April 24-26, 1961 $15,895	Gallaudet College, Washington, D.C. 20002 Alan B. Crammatte	To develop an awareness in deaf leaders of the deaf of their responsibilities in the area of social service and to examine the means for applying that leadership effectively. (IV)	"Proceedings of the Workshop on Community Development through Organizations of and for the Deaf"
61-73 Orientation of Catholic Clergy to Vocational Rehabilitation March 15-17, 1961 $13,000	Gallaudet College, Washington, D.C. 20002 Powrie V. Doctor, Ph.D.	To provide training on rehabilitation of deaf persons for personnel of the Roman Catholic Church. (III)	"Workshops for Catholic Personnel for the Deaf"
61-83 Psychological Services for the Deaf January 30-February 3, 1961 $6,470	Frederic Burk Foundation for Education, 1600 Holloway Ave., San Francisco, Calif. 94132 William M. Usdane, Ph.D.	To provide a training course for psychologists on physical assessment of the deaf. (II)	"Psychological Services for the Deaf"
62-9 Orientation to Deafness for Vocational Rehabilitation and Cooperating Workers September 18-20, 1961 $10,000	University of Vermont, College of Medicine, 232 S. Willard St., Burlington, Vermont 05401 M. Alfred Haynes, M.D.	To bring greater focus on the adjustment needs of the deaf and the hard of hearing. (III)	"Proceedings of the Institute of the Rehabilitation of the Deaf and Hard of Hearing"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
62-22 Traffic Safety and Deaf Driver Education February 12-14, 1962 $12,500	University of Denver, University Park, Denver, Colorado 80210 Sherman G. Finesilver, L.L.B.	To examine the status of the deaf driver in its impact on his social and employment well-being. (II)	"National Symposium on the Deaf —Driving and Employability"
62-34 Orientation of Episcopal Clergy to Vocational Rehabilitation November 15-17, 1961 $12,750	Gallaudet College, Washington, D.C. 20002 Powrie V. Doctor, Ph.D.	To provide training on the rehabilitation of the deaf for personnel of the Episcopal Church. (III)	"Workshop for Episcopal Workers for the Deaf"
62-48 Traffic Safety and Deaf Driver Education February 12-14, 1962 $6,150	University of Denver, University Park, Denver, Colorado 80210 Sherman G. Finesilver, L.L.B.	For compiling and analyzing material on deaf drivers and for instituting driver training programs for the deaf. (II)	"National Symposium on the Deaf —Driving and Employability"
62-53 Orientation of Social Workers to the Problems of the Deaf November 18-22, 1963 $21,500	University of California, Berkeley, Calif. 94720 Mildred Alexander	To provide orientation for social workers on the problems of the deaf. (III)	"Orientation of Social Workers to the Problems of Deaf Persons"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
62-65 Dactylology June 11, 1962- June 30, 1963 $1,600	Boston Center for Adult Education, 5 Commonwealth Avenue, Boston, Massachusetts 02116 Sidney B. Smith	To provide a training course in manual communication for personnel in rehabilitation and related fields. (II)	
62-84 Additional Guidelines for Establishment of Rehabilitation Facilities October 19-20, 1962 $16,000	University of Wisconsin, Madison, Wisconsin 54306 John V. Irwin	To provide training in the role of rehabilitation facilities in individual diagnosis and occupational adjustment of the deaf. (V)	"Guidelines for Establishment of Rehabilitation Facilities for the Deaf" - A Manual Based on Workshops at Fort Monroe, Virginia, and Delavan, Wisconsin in 1959 and 1962
62-336 The Adult Deaf August 4, 1962 $200	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Wayne F. McIntire, Ph.D.	To acquaint leadership training students with successful adult deaf persons. (III)	Paper - Unpublished "The Deaf - Their Organizations and Their Needs"
63-24 Adjustment to Deafness February 26-28, 1963 $5,600	University of Arizona, Tucson, Arizona 85721 David Wayne Smith, Ph.D.	To provide training for rehabilitation personnel on the personal and social adjustment needs of deaf people. (II)	
63-62 Training for Dormitory Personnel in Schools for the Deaf March 1-2, 1963 $672	New Mexico School for the Deaf, 1061 Cerrillo Rd., Santa Fe, New Mexico 87501 Marshall S. Hester	To provide training for dormitory personnel in schools for the deaf; to enhance the social and learning experience of deaf children. (II)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
63-67 Training for Rehabilitation Counselors on Rehabilitation of the Deaf March 19-22, 1963 $3,730	Jewish Employment and Vocational Service, 1727 Locust Street, St. Louis, Missouri 63103 Albert Steward	To provide training for rehabilitation counselors for rehabilitation of the deaf. (II)	
63-103 Research on Behavioral Aspects of Deafness May 3-5, 1965 $12,059	University of Illinois, Institute for Research on Exceptional Children, Urbana, Illinois 61803 Stephen P. Quigley, Ph.D.	To appraise the status of research in behavioral aspects of deafness and to implement sharing of ideas among persons conducting studies in this area. (II)	"Research on Behavioral Aspects of Deafness"
63-119 The Education and Vocational Rehabilitation of Young Deaf Adults February 2-5, 1964 $12,643	University of Wisconsin, Wisc. State Board of Vocational and Adult Education, Wisc. Department of Public Instruction, Delavan, Wisconsin 53115 George N. Wright, Ph.D.	To provide opportunity for sharing of knowledge and experience by vocational rehabilitation and special education personnel for more effective transition of deaf persons from education to rehabilitation service. (II)	"The Education and Vocational Rehabilitation of Young Deaf Adults"
63-336 Conference — Interpreters and Instructors of Adult Education for the Deaf May 18, 1963 $250	San Fernando Valley State College, 18111 Nordhoff Street, Northridge, Calif. 91324 Ray L. Jones, Ed.D.	To evaluate a six-week pilot program of Adult Education classes for the deaf. (IV)	Proceedings of a Conference of Instructors and Interpreters of a Pilot Program of Classes for the Adult Deaf.

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
63-336 Evaluation of the Adult Deaf May 30-June 1, 1963 $150	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Ray L. Jones, Ed.D.	To involve deaf persons and teachers who had participated in a pilot adult education class in an evaluation of their experiences. (IV)	Evaluation of the Pilot Program of Classes for the Adult Deaf.
63-336 Leadership Opportunities for the Adult Deaf March 19, 1963 $250	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Ray L. Jones, Ed.D.	To acquaint Leadership Training students with officers of national and state organizations for the deaf and to give insight into the specific leadership needs in these organizations. (III)	
63-336 Conference on Increased Educational Opportunities for Adult Deaf July 20, 1963 $500	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Ray L. Jones, Ed.D.	To present a panel report on post-secondary education programs available for adult deaf persons in America. (IV)	Proceedings of a Conference on "Increased Educational Opportunities for the Adult Deaf"
63-404 Workshop for Lutherans on Deafness and Rehabilitation July 1-3, 1963 $19,000	Gallaudet College, Washington, D.C. 20002 Powrie V. Doctor, Ph.D.	To orient church workers in problems related to deafness and to bring awareness of services available to deaf people in vocational rehabilitation and other community resources. (III)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
64-3 Community Responsibilities for Meeting the Needs of the Deaf, I and II I-February 14-16, 1964 II-November 7, 1964 $4,940	San Francisco Hearing Society, Inc., 1428 Bush Street, San Francisco, Calif. 94109 John L. Darby	To provide training on community responsibilities in meeting the needs of the deaf. (II)	"Community Responsibilities for Meeting the Needs of Deaf Persons"
64-4 Training in Manual Communication for Personnel in Rehabilitation and Related Fields September 3, 1963- June 30, 1964 $10,800	District of Columbia Association of the Deaf, 2015 Wooded Way, Adelphi, Md. 20[illegible]83 Jerald M. Jordan	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
64-17 Training in the Use of the Language of Signs in Communication with Deaf Persons October 1, 1963- May 31, 1964 $1,900	Boston Center for Adult Education, 5 Commonwealth Avenue, Boston, Mass. 02116 Sidney B. Smith	To provide training for personnel in rehabilitation and related fields of the language of signs in communication with deaf persons. (II)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
64-38 Training in Manual Communication for Personnel in Rehabilitation and Related Fields February 1-June 30,1964 $2,500	The Pennsylvania Society for the the Advancement of the Deaf, 248 Sewickly-Oackmont Road, Pittsburgh, Pa. 15237 Bodil C. Tvede	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
64-72 Understanding the Deaf Client July 13-24, 1964 $13,659	University of Colorado, Boulder, Colorado 80302 Richard Krug	To provide training for rehabilitation counselors on understanding and better serving the deaf client. (II)	"A Report on the Summer Workshop for Vocational Rehabilitation Counselors - Understanding the Deaf Client"
64-90 Improved Opportunities for the Deaf October 18-22, 1964 $34,500	The University of Tennessee, Knoxville, Tenn. 37916 Marshall S. Hester	To develop guidelines for improving vocational training for deaf persons. (I)	"Proceedings of a National Workshop on Improved Opportunities for the Deaf"
64-336 Conference on Leadership Needs in the Deaf Community February 8, 1964 $500	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Ray L. Jones, Ed.D.	To explore the social, educational, vocational, and religious needs of deaf persons and to identify ways in which leaders from both the hearing and deaf communities can cooperatively work to meet these needs. (IV)	"Proceedings of a Conference on Leadership Needs in the Deaf Community"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
64-336 Deaf Community Class (Sensitivity Training) March 13-June 5, 1964 $800	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Nora Weckler, Ph.D.	To determine if deaf persons can profit from participation in a "sensitivity training class" in which the trainer maintains communication through the assistance of interpreters. (II)	A Community Program for Identification, Training and Utilization of Interpreting Services for Deaf Persons: Pages 18-23
64-336 Manual Communication Class March 13-June 5, 1964 $800	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Barbara Babbini	To provide introductory training in fingerspelling and the language of signs for personnel preparing to work with deaf persons in community agencies. (II)	An Introductory Course in Manual Communication
64-460 Guidelines for Interpreting for the Deaf June 14-17, 1964 $17,572	Ball State Teachers College, Muncie, Indiana 47306 William J. McClure	To establish standards for interpreters for deaf people, to suggest training and curricula for training centers for interpreters for deaf people, and to develop a manual on guidelines for interpreters. (I)	"Workshop on Interpreting for the Deaf"
64-484 Orientating Audiological Personnel about the Deaf, Regions V and VI April 20-24, 1964 $7,000	University of Illinois, Urbana, Illinois 61803 Stephen P. Quigley, Ph.D.	To promote better understanding for audiologists of the total needs of deaf people. (III)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
65-5 Dactylology September 1, 1964-May 31, 1965 $2,100	Boston Center for Adult Education, 5 Commonwealth Ave., Boston, Massachusetts 02116 Sidney B. Smith	To provide training for personnel in rehabilitation and related communication with the deaf. (II)	
65-8 Training in Manual Communication for Persons Working in Rehabilitation and Related Fields September 1, 1964-February 27, 1965 $2,150	Arkansas School for the Deaf, 2400 W. Markham, Little Rock, Arkansas 72205 Roy G. Parks	To provide training in manual communication for persons working in rehabilitation and related fields. (II)	
65-10 Training for Personnel in Rehabilitation and Related Fields on Manual Communication September 10, 1964-June 30, 1965 $10,000	District of Columbia Association of the Deaf, 4015 Byrd Rd., Kensington, Md. 20795 Rex P. Lowman	To provide training in manual communication for persons working in rehabilitation and related fields. (II)	
65-336 Leadership Conference for Officers of the California Association for the Deaf May 21-23, 1965 $500	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Harold Ramger Nora Weckler, Ph.D. James Craig, Ph.D. Ray L. Jones, Ed.D.	To explore the values of short-term "sensitivity training" sessions for officers in a State organization for the deaf. (IV)	A Community Program for Identification, Training and Utilization of Interpreting Services for Deaf Persons: Pages 34-43

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
65-336 Sensitivity Training Class February 15-May 10, 1965 $800	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Nora Weckler, Ph.D.	To explore the possible values to be gained by bringing both hearing and deaf persons together in a formal sensitivity training class. (V)	A Community Program for Identification, Training and Utilization of Interpreting Services for Deaf Persons: Pages 44-48
65-336 Conference for Interpreters April 3, 1965 $400	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Ray L. Jones, Ed.D.	To bring together interpreters from Southern California and to identify some of the areas in which interpreting services were most urgently needed. (II)	
65-412 Workshop for Baptists on Deafness and Rehabilitation August 16-19, 1965 $27,594	The University of Tennessee, College of Education, Knoxville, Tenn. 37916 W. Lloyd Graunke, Ph.D.	To orient Baptist churchworkers in deafness and rehabilitation in their interest to serve deaf people better. (III)	"Workshop for Baptists on Deafness and Rehabilitation"
65-484 and 66-484 Interpreting for Deaf People July 7-27, 1965 $9,584	University of Illinois, Institute for Research on Exceptional Children, Urbana, Illinois 61803 Stephen P. Quigley, Ph.D.	To develop guidelines for interpreters for deaf people in specific areas and general aspects of the interpreting task. (II)	"Interpreting for Deaf People"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
65-557 (Conducted under RD-1170-S-64) National Conference on Audiology and Education of the Deaf December 7-10, 1964 $16,538	American Speech and Hearing Association and The Conference of Executives of American Schools for the Deaf, 9030 Old Georgetown Road, Washington, D.C. 20014 Ira M. Ventry	To develop a better understanding between educators of the deaf and audiologists in order to improve and expand audiologic services to the deaf and to identify research needs. (II)	"Audiology and Education of the Deaf: A Research Project and Training Manual Sponsored by the Joint Committee on Audiology and Education of the Deaf"
65-557 Regional Conferences on Audiology and Education of the Deaf $40,954	American Speech and Hearing Association, 9030 Old Georgetown Road, Washington, D.C. 20014 Region I - Sept. 24-25, 1965, Wilbert Pronovost; Region III - January 13-14, 1966, Miriam P. Hardy; Region IV - January 14-15, 1966, Robert Roach; Region V - October 1-2, 1965, Kenneth Mangan; Region VI - October 8-9, 1965, June Miller; Region VII - December 3-4, 1965, Lennart Kopra; Region VIII - September 13-14, 1965, Jack Willeford; Region IX - January 31 - February 1, 1966, Donald Calvert.	To bring together audiologists and educators of the deaf to discuss: a) current emphasis on education of the deaf in audiology training programs; b) the types of audiologic services provided deaf clients in speech and hearing centers; c) the kinds of audiologic services available in educational programs for the deaf; d) the attitudes of teachers of the deaf and audiologists about their academic training and about interprofessional relationships and e) the resolutions adopted by the participants in the National Conference, to react to such resolutions and to formulate additional resolutions and plans for the improvement of services to the deaf. (II)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
66-11 Dactylology or Use of the Sign Language as a Means of Communication with the Deaf and the Hard of Hearing October 11, 1965-May 31, 1966 $2,700	Boston Center for Adult Education, 5 Commonwealth Ave., Boston, Massachusetts 02116 Sidney B. Smith	To provide training in dactylology for personnel in rehabilitation and related fields. (II)	
66-18 Training in Manual Communication for Personnel in Rehabilitation and Related Fields November 1, 1965-August 31, 1966 $6,710	District of Columbia Association of the Deaf, Gallaudet College, Washington, D.C. 20002 Rex P. Lowman	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
66-27 Training Course in Manual Communication for Personnel in Rehabilitation and Related Fields November 22, 1965-June 30, 1966 $6,000	The Pennsylvania Society for the Advancement of the Deaf, 248 Sewickey-Oackmont Road, Pittsburgh, Pa. 15237 Bodil C. Tvede	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
66-28 Training Course in Manual Communication for Personnel in Rehabilitation and Related Fields November 29, 1965-June 30, 1966 $1,880	The Episcopal Church of Our Savior, 560 North Broadway, Baltimore, Maryland 21205 Steve L. Mathis, III	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
66-29 Training in Manual Communication for Personnel in Rehabilitation and Related Fields December 1, 1965-June 30, 1966 $1,648	St. Anthony's Special Education Association, 1118 W. French Pl., San Antonio, Texas 78201 Nick Calzoncit, Jr.	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
66-30 Training in Fingerspelling for Members of the Indiana School for the Deaf Parent-Teacher-Counselor Organization and its Friends December 1, 1965-December 1, 1966 $1,960	Indiana School for the Deaf, Parent-Teacher-Counselor Organization, 1200 E. 42nd St., Indianapolis, Indiana 46226 Roy K. Holcomb	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
66-31 Training Course in Manual Communication for Personnel in Rehabilitation and Related Fields January 3-June 30, 1966 $4,950	Maryland Association of the Deaf, 9102 Edmonston Road, Greenbelt, Maryland 20770 August P. Herdtfelder	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
66-42 Casework Standards for the Deaf May 23-27, 1966 $33,152	University of Illinois, Institute for Research on Exceptional Children, Urbana, Illinois 61803 Stephen P. Quigley, Ph.D.	To improve case service for deaf people in development of standards and guidelines. (I)	"The Vocational Rehabilitation of Deaf People."
66-45 Activation of Interpreting Services for the Deaf July 9-11, 1966 $30,000	National Association of the Deaf, 2025 Eye Street, N.W., Washington, D.C. 20006 Robert G. Sanderson	To identify methods for recruiting, training, and certifying qualified persons as professional interpreters for deaf people. (II)	"Workshop to Activate Interpreting Services for the Deaf."
66-60 A Training Course for Adult Deaf Drivers February 1, 1966-March 31, 1967 $3,300	University of Denver, 2115 S. University Blvd., Denver, Colorado 80210 Harvey D. Wilson, Ph.D.	To develop curricula for driver safety programs for deaf people. (II)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
66-70 Training in Manual Communication for Persons Working in Rehabilitation and Related Fields February 28-September 30, 1966 $2,575	Arkansas Rehabilitation Service, 211 Broadway, Little Rock, Arkansas 77201 E. Russell Baxter	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
66-101 Training in Manual Communication for Individuals Associated with, and Interested in, the Economic and Social Welfare of the Deaf May 2-September 30, 1966 $700	Greater Kansas City Advisory Council for the Deaf, Kansas City General Hospital and Medical Center, 24th and Cherry Street, Kansas City, Missouri 64108 Larry G. Stewart	To provide a training course in manual communication for individuals associated with, and interested in the economic and social welfare of the deaf. (III)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
66-124 Proposed Training Course of Leaders in Education of the Deaf and Vocational Rehabilitation Personnel to Develop Guidelines for Working Relationships in the Rehabilitation of Deaf People September 20-21, 1966 $2,500	New Mexico State University, University Park, New Mexico 88001 Marshall S. Hester	To make plans for a training course for leaders in education of the deaf and vocational rehabilitation personnel to develop guidelines for working relationships in the rehabilitation of deaf people. (II)	
66-336 Training Conference for Regional IX Rehabilitation Counselors for Deaf March 9-11, 1966 $6,584	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Wayne McIntire, Ph.D.	To acquaint rehabilitation-counselors for the deaf, vocational rehabilitation psychologists and students in the Leadership Training Program with the mental health needs of deaf persons and with the psychological tests recommended for use in evaluating deaf persons. (III)	
66-336 Conference of Teachers and Interpreters in Adult Education Classes for the Deaf March 19, 1966 $250	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Victor Galloway	To evaluate local and national adult education programs for the deaf which have developed since 1963 and to explore ways in which these programs might be made more effective. (IV)	"A Report on the Conference for Teachers and Interpreters in Adult Education Programs for the Deaf"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
66-336 Interpreter's Conference April 9, 1966 $100	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Victor Galloway	To encourage the establishment of a local chapter of interpreters by having local interpreters meet with the president of the National Registry of Interpreters for the Deaf. (IV)	
66-336 Interpreter's Class February 1-April 19, 1966 $900	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Ray L. Jones, Ed.D. Edgar Shroyer	To acquaint potential interpreters with the various situations in which adult deaf persons urgently need interpreting services and to help class participants improve their interpreting skills. (II)	
67-9 Orientation of Assemblies of God Workers for the Deaf to Vocational Rehabilitation April 17-21, 1967 $27,500	Ministry to the Deaf and Blind, General Council of the Assemblies of God, 1445 Boonville Ave., Springfield, Mo. 65802 Maxine Strobridge	To promote a better understanding of vocational rehabilitation services available to deaf persons. (III)	"Workshop on Deafness and Vocational Rehabilitation for Assemblies of God Workers"
67-10 Better Techniques of Communication for Severely Language-Handicapped Deaf People August 21-25, 1967 $12,000	The Catholic University of America, Washington, D.C. 20017 Hans G. Furth, Ph.D.	To develop a language training tool for rehabilitation centers serving multiply handicapped deaf people. (II)	"Better Techniques of Communication for Severely Language-Handicapped Deaf People"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
67-14 Proposed Workshop for Orientation of Jewish Clergy and Lay Readers to Deafness and Vocational Rehabilitation May 8-9, 1967 $2,450	National Congress of Jewish Deaf, Inc., 9102 Edmonston Rd., Greenbelt, Md. 20770 Alexander Fleischman	To plan a workshop to acquaint Jewish clergy and lay workers with the problems related to deafness and to bring awareness of services and resources available for ameliorating the effects of this disability. (III)	
67-15 Training in Manual Communication for Personnel in Rehabilitation and Related Fields August 15, 1966-June 30, 1967 $15,000	District of Columbia Association of the Deaf, 911 Pennsylvania Ave., Washington, D.C. 20004 Rex P. Lowman	To enable personnel in rehabilitation and related fields to acquire manual communication skills. (II)	
67-16 Training in Fingerspelling for Members of the Indiana School for the Deaf Parent-Teacher-Counselor Organization and Its Friends September 1, 1966-June 30, 1967 $4,817	Indiana School for the Deaf, Parent-Teacher-Counselor Organization, 1200 E. 42nd St., Indianapolis, Ind. 46205 Roy K. Holcomb	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
67-25 Training in Manual Communication for Personnel in Rehabilitation and Related Fields October 1, 1966-June 30, 1967 $7,100	Maryland Association of the Deaf, 1025 Woodside Parkway, Silver Spring, Md. 20910 August P. Herdtfelder	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
67-26 Training in Manual Communication for Persons Working in Rehabilitation and Related Fields October 1, 1966-June 30, 1967 $2,850	Arkansas Rehabilitation Service, National Investors Bldg., 211 Broadway, Little Rock, Arkansas 77201 E. Russell Baxter	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
67-28 Training in Manual Communication for Personnel in Rehabilitation and Related Fields October 10, 1966-June 30, 1967 $4,280	The Episcopal Church of Our Savior, 560 N. Broadway, Baltimore, Md. 21205 Steve L. Mathis, III	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
67-29 Training in Manual Communication for Personnel in Rehabilitation and Related Fields October 10, 1966-June 30, 1967 $1,520	Seattle Hearing and Speech Center, Inc., Seattle, Washington 98102 Clyde E. Mott	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
67-30 Training Institute for Rehabilitation Counselors in the Area of the Deaf March 29-31, 1967 $12,211	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Wayne F. McIntire, Ph.D. Lloyd Johns, Ed.D.	To assist rehabilitation personnel in identifying community resources and services that will be helpful in their work with deaf people. (II)	
67-32 Workshop for Psychiatrists on Extending Mental Health Services to the Deaf April 7-8, 1967 $21,240	Research Foundation for Mental Hygiene, Inc., 722 W. 168th St., New York, N.Y. 10032 John D. Rainer, M.D.	To stimulate the interest of psychiatrists in extending mental health services to the deaf. (II)	"Psychiatry and the Deaf"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
67-33 Statewide Language of Signs Course Program in Pennsylvania November 1, 1966-June 30, 1967 $11,700	The Pennsylvania Society for the Advancement of the Deaf, 248 Sewickey-Oackmont Road, Pittsburgh, Pa. 15237 Bodil C. Tvede	To provide training in manual communication for personnel in rehabilitation and related fields. (II)	
67-51 Patterns and Guidelines for a National Program of Instruction in Manual Communication February 27-28, 1967 $2,500	National Association of the Deaf, 2025 Eye Street, N.W., Washington, D.C. 20006 Frederick C. Schreiber	To develop standards in manual communication instruction for more effective community programs. (I)	
67-54 Proposed Workshop for Non-Medical Professionals to Develop Guidelines for Mental Health Services for the Deaf February 15-17, 1967 $2,260	Research Foundation for Mental Hygiene, Inc., 722 W. 168th St., New York, N.Y. 10032 John D. Rainer, M.D.	To plan a national workshop for the development of guidelines for non-medical professional and lay people in mental health services for the deaf. (I)	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
67-336 Training Conference for Region IX Rehabilitation Counselors for the Deaf March 29-31, 1967 $12,211	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Wayne McIntire, Ph.D.	For further development of community rehabilitation services for unemployed deaf persons and underemployed deaf persons. (V)	
67-336 Interpreting in the Legal Setting April 1, 1967 $250	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Barry Griffing Pat Knudsen	To bring together judges, attorneys, interpreters, police officers and deaf persons in an exploratory study of the need for and problems faced by interpreters in the legal setting. (II)	
67-336 Class "Interpreting in the Rehabilitation Setting" February 8-May 24, 1967 $1,000	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 Edgar Shroyer	To acquaint participants with the possibilities of opening post-secondary educational opportunities to deaf vocational rehabilitation clients through interpreters and to train interpreters for the college classroom. (II)	
67-336 "Total Immersion" Introduction to Sign Language July 28-29, 1967 $200	San Fernando Valley State College, 18111 Nordhoff St., Northridge, Calif. 91324 James Whitworth	To explore the value of an intensive exposure to sign language as a way of giving professional personnel insight into the problems of communicating with deaf persons and to develop beginning communication skills. (II)	Unpublished Paper, August, 1967: "A Study of the Application of the Berlitz Principles of Teaching Language to the Teaching of Manual Communication"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
67-557 Seminar on Skills and Knowledge Needed by Audiologists and Educators of the Deaf March 2-4, 1967 $13,270	American Speech and Hearing Association and the Conference of Excutives of American Schools for the Deaf, 9030 Old Georgetown Road, Washington, D.C. 20014 William E. Castle, Ph.D.	To improve and expand audiologic services to the deaf in the development of better understanding between audiologists and educators of the deaf. (II)	"Final Report on the Seminar on Skills and Knowledge Needed by Audiologists and Educators of the Deaf"
67-592 Middle States Institute on the Vocational Rehabilitation of the Deaf May 24-26, 1967 $9,287	University of Pittsburgh, School of Education, Pittsburgh, Pa. 15213 William N. Craig, Ph.D.	To increase the skills of professional people working with the deaf in knowledge of new and innovative services and programs. (II)	"Rehabilitation of the Deaf: Threshold of Innovation"
67-684 Proposed Workshop - New Vistas for Competitive Employment of Deaf Persons April 10-11, 1967 $2,500	University of Pittsburgh, School of Education, Pittsburgh, Pa. 15213 William N. Craig, Ph.D.	To develop guidelines on employment of the deaf for counselors, placement officers, employers and personnel officers. (I)	
68-576 Proposed Workshop to Establish Guidelines for Establishment of Comprehensive Vocational Services for the Multiply Handicapped Deaf May 1-2, 1967 $2,500	DePaul University, Institute for Study of Exceptional Children and Adults, 25 East Jackson Blvd., Chicago, Illinois 60604 William D. Phillips, Ph.D.	To plan a national workshop for the development of guidelines for the establishment of comprehensive rehabilitation services for the multiply-handicapped deaf in the areas of identification, evaluation, training, placement, and follow-up. (I)	

GRANTEE AGENCIES OF REHABILITATION SERVICES ADMINISTRATION SHORT-TERM TRAINING PROGRAMS CONCERNING DEAFNESS

Alphabetically Listed

Agency	Grant Number
American Academy of Ophthalmology and Otolaryngology	60-36
American Hearing Society	57-129, 59-29
American Speech and Hearing Association and Conference of Executives of American Schools for the Deaf	65-557, 67-557
Arizona, University of	63-24
Arkansas Rehabilitation Service	66-70, 67-26
Arkansas School for the Deaf	65-8
Ball State Teachers College	64-460
Boston Center for Adult Education	64-65, 64-17, 65-5, 66-11
California, University of, Berkeley	62-53
Catholic University of America	59-89, 60-80, 60-198, 67-10
Colorado, University of, Boulder	64-72
Denver, University of	62-22, 62-48, 66-60
DePaul University, Institute for Study of Exceptional Children and Adults	68-576
District of Columbia Association of the Deaf	64-4, 65-10, 66-18, 67-15
Episcopal Church of Our Savior, Baltimore	66-28, 67-28
Frederic Burk Foundation for Education, San Francisco	61-83
Gallaudet College	61-22, 61-49, 61-73, 62-34, 63-404
Georgia, University of	59-92
Illinois, University of, Institute for Research on Exceptional Children, Urbana	63-103, 64-484, 65-484, and 66-484, 66-42
Indiana School for the Deaf, Parent-Teacher-Counselor Organization	66-30, 67-16
Jewish Employment and Vocational Service, St. Louis	63-67
Greater Kansas City Advisory for the Deaf, Kansas City General Hospital and Medical Center	66-101
Maryland Association of the Deaf	66-31, 67-25
Maryland School for the Deaf	59-105
Ministry to the Deaf and Blind, General Council of the Assemblies of God	67-9
Municipal University of Omaha	60-54
National Association of the Deaf	58-89, 66-45, 67-51
National Congress of Jewish Deaf, Inc.	67-14
New Mexico School for the Deaf	63-62
New Mexico State University	66-124
New York School for the Deaf	57-118

Agency	Grant Award
Pennsylvania Society for the Advancement of the Deaf	64-38, 66-27, 67-33
Pittsburgh, University of, School of Education	67-592, 67-684
Research Foundation for Mental Hygiene, Inc., New York	67-32, 67-54
San Fernando Valley State College	66-336, 67-30, 62-336, 63-336, 64-336, 65-336, 67-336
San Francisco Hearing Society, Inc.	64-3
Seattle Hearing and Speech Center, Inc.	67-29
St. Anthony's Special Education Association, San Antonio, Texas	66-29
Tennessee, University of	64-90, 65-412
Vermont, University of, College of Medicine	62-9
Wisconsin, University of, Madison	58-64, 62-84
Wisconsin, University of, Wisconsin State Board of Vocational and Adult Education, Delavan	63-119

PROJECT DIRECTORS OF REHABILITATION SERVICES ADMINISTRATION SHORT-TERM TRAINING PROGRAMS CONCERNING DEAFNESS

Alphabetically Listed

Project Director	Grant No.	Grant Award
Alexander, Mildred	62-53	$ 21,500
Ambrosen, Lloyd A.	59-105	8,370
Babbini, Barbara	64-336	800
Bail, Milo, Ph.D.	60-54	2.250
Baxter, E. Russell	66-70	2,575
	67-26	2,850
Calvert, Donald	**65-557	
Calzoncit, Jr., Nick	66-29	1,648
Castle, William E., Ph.D.	67-557	13,270
Cloud, Daniel T.	57-118	9,250
Craig, James, Ph.D.	*65-336	500
Craig, William N., Ph.D.	67-592	9,287
	67-684	2,500
Crammatte, Alan B.	61-49	15,895
Darby, John L.	64-3	4,940
Doctor, Powrie V., Ph.D.	61-73	13,000
	62-34	12,750
	63-404	19,000
Finesilver, Sherman G.	62-22	12,500
	62-48	6,150
Fleischman, Alexander	67-14	2,450
Frisina, Robert, Ph.D.	61-22	6,815
Furth, Hans, Ph.D.	60-198	2,000
	67-10	12,000
Galloway, Victor	66-336	250
	66-336	100
Graunke, W. Lloyd, Ph.D.	65-412	27,594
Griffing, Barry	*67-336	250
Hardy, Miriam P.	**65-557	
Harvel, Alvin E.	60-36	2,000
Haynes, M. Alfred, M.D.	62-9	10,000
Herdtfelder, August P.	66-31	4,950
	67-25	7,100
Hester, Marshall S.	63-62	672
	64-90	34,500
	66-124	2,500
Holcomb, Roy K.	66-30	1,960
	67-16	4,817
Irwin, John V.	58-64	5,572
	62-84	16,000
Jones, Ray L., Ph.D.	63-336	250
	63-336	250
	63-336	500

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*Co-Director

**Regional Conferences

Project Director	Grant No.	Grant Award
Jones, Ray L., Ph.D.	63-336	$ 150
	64-336	500
	*65-336 (see J. Craig)	
	65-336	400
	*66-336	900
	*67-336 (see Griffing)	
	*67-336	1,000
	*67-336	200
Jordan, Jerald M.	64-4	10,800
Kinnane, John F., Ph.D.	59-89	6,831
	60-80	6,948
Kopia, Lennert	**65-557	
Krug, Richard	64-72	13,659
LaBenz, Paul	59-29	10,080
Lerz, W. A.	66-52	6,584
Lowman, Rex P.	65-10	10,000
	66-18	6,710
	67-15	15,000
Luper, Harold L., Ph.D.	59-92	6,835
Mangan, Kenneth	**65-557	
Mathis, III, Steve L.	66-28	1,880
	67-28	4,280
McClure, William J.	64-460	17,572
McIntire, Wayne F., Ph.D.	62-336	200
	66-336	6,584
	67-336	12,211
Miller, June	**65-557	
Mott, Clyde E.	67-29	1,520
Parks, Roy G.	65-8	2,150
Phillips, William D., Ph.D.	68-576	2,500
Pronovost, Wilbert	**65-557	40,954
Quigley, Stephen P., Ph.D.	63-103	12,059
	64-484	7,000
	65-484 and 66-484	9,584
	66-42	33,152
Rainer, John D., M.D.	67-32	21,240
	67-54	2,260
Ramger, Harold	*65-336 (see J. Craig)	
Roach, Robert	**65-557	
Sanderson, Robert G.	66-45	30,000
Schreiber, Frederick C.	67-51	2,500
Shroyer, Edgar	*66-336 (see Jones)	
	*67-336 (see Jones)	
Smith, David Wayne, Ph.D.	63-24	5,600
Smith, Sidney B.	62-65	1,600
	64-17	1,900
	65-5	2,100
	66-11	2,700

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*Co-Director

**Regional Conferences

Project Director	Grant No.		Grant Award
Stevenson, Elwood A.	58-89		$ 8,318
Steward, Albert	63-67		3,730
Stewart, Larry G.	66-101		700
Strobridge, Maxine	67-9		27,500
Tvede, Bodil C.	64-38		2,500
	66-27		6,000
	67-33		11,700
Usdane, William M., Ph.D.	61-83		6,470
Ventry, Ira M.	65-557	(Conducted under RD 1170-S-64)	16,538
Walker, Crayton	57-129		585
Weckler, Nora, Ph.D.	64-336		800
	*65-336	(see J. Craig)	
	65-336		800
Whitworth, James	*67-338	(see Jones)	
Willeford, Jack	**65-557		
Wilson, Harvey D., Ph.D.	66-60		3,300
Wright, George N., Ph.D.	63-119		12,643
Total			$721,292

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*Co-Director

**Regional Conferences

REHABILITATION SERVICES ADMINISTRATION SHORT-TERM TRAINING PROGRAMS IN THE AREA OF THE DEAF GRANT FUNDS BY FISCAL YEAR (Pages 86-88)

Grant No.	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
118	$ 9,250	$	$	$	$	$	$	$	$	$	$	$
129	585											
64		5,572										
89		8,318										
29			10,080									
89			6,831									
92			6,835									
105			8,370									
36				2,000								
54				2,250								
80				6,948								
198				2,000								
22					6,815							
49					15,895							
73					13,000							
83					6,470							
9						10,000						
22						12,500						
34						12,750						
48						6,150						
53						21,500						
65						1,600						
84						16,000						
336						200						
24							5,600					
62							672					
67							3,730					
103							12,059					
119							12,643					
TOTALS	$ 9,835	$ 13,890	$ 32,116	$ 13,198	$ 42,180	$ 80,700	$ 34,704	$	$	$	$	$

Grant No.	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Brought Forward												
	$ 9,835	$ 13,890	$ 32,116	$ 13,198	$ 42,180	$ 80,700	$ 34,704	$	$	$	$	$
336							1,150					
404							19,000					
3								4,940				
4								10,800				
17								1,900				
38								2,500				
72								13,659				
90								34,500				
336								2,100				
460								17,572				
484								7,000				
5									2,100			
8									2,150			
10									10,000			
336									1,700			
412									27,594			
484 (1965 and 1966)									9,584			
557 (Conducted under RD 1170-S-64)									16,538			
557 (Regional Conferences)									40,954			
11										2,700		
18										6,710		
27										6,000		
28										1,880		
29										1,648		
30										1,960		
31										4,950		
42										33,152		
45										2,500		
60										3,300		
TOTALS	$ 9,835	$ 13,890	$ 32,116	$ 13,198	$ 42,180	$ 80,700	$ 54,854	$ 94,971	$110,620	$64,800	$	$

Grant No.	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Brought Forward	$ 9,835	$ 13,890	$ 32,116	$ 13,198	$ 42,180	$ 80,700	$ 54,854	$ 94,971	$110,620	$ 64,800	$	$
70										2,575		
101										700		
124										30,000		
336										7,834		
9											27,500	
10											12,000	
14											2,450	
15											15,000	
16											4,817	
25											7,100	
26											2,850	
28											4,280	
29											1,520	
30											12,211	
32											21,240	
33											11,700	
51											2,500	
54											2,260	
336											13,661	
557											13,270	
592											9,287	
684											2,500	
576												2,500
TOTALS:	$ 9,835	$ 13,890	$ 32,116	$ 13,198	$ 42,180	$ 80,700	$ 54,854	$ 94,971	$110,620	$105,909	$166,146	$ 2,500

Grand Total: $724,519

CENTER FOR RESEARCH AND ADVANCED TRAINING IN DEAFNESS REHABILITATION SOCIAL AND REHABILITATION SERVICE

The first and only rehabilitation research and training center in deafness was established by the Social and Rehabilitation Service at New York University in 1966. Like other special programs of this type, the center in deafness was instituted so that sustained research and training could be conducted in the favorable conditions offered in a university setting.

The broad aim of the New York University Center for Research and Advanced Training in Deafness Rehabilitation is to effect a pooling of multidisciplinary talents, physical resources, pertinent materials, and deaf and hearing professionals and community cooperation in order to accelerate breakthrough in understanding of the problems, handicaps and needs of the deaf, and the optimum management of these needs in habilitation and rehabilitation. Specialties thus far involved in Center research and training activities include: psychology, psychiatry, communication science, otology, audiology, education, special education of the deaf, administration, research, denominational work, remedial reading, performing arts.

To carry out its broad aim, the Center has nine specific objectives which provide the structure for programmed research and for short- and long-term training. They are as follows:

1) To refine, intensify and extend knowledge concerning the communications handicaps of deafness, and to test out promising means for ameliorating these handicaps.

   A promising outcome of this objective is the anticipated development of a training curriculum for professional interpreters for the deaf.

2) To improve the amount, variety, and quality of professional services for the deaf.

   Two short-term training programs for psychiatrists in the subspecialty of deafness sponsored in whole and in part by the Center are encouraging professional interest in mental health service for deaf people.

3) To achieve more effective operational techniques and approaches on the part of service workers in the habilitation and rehabilitation of the deaf.

   A workshop in rehabilitation services for the deaf and the hard-of-hearing conducted for rehabilitation counselors provided orientation to deafness and demonstration of service techniques for deaf people.

4) To promote interdisciplinary collaboration and communication.

This is being accomplished through the use of multidisciplinary procedure in training and in research.

5) To afford professional and leadership talents among the deaf the necessary opportunities for development and utilization.

Qualified deaf trainees are accepted into the Center long-term training program.

In collaboration with the Professional Society of the Deaf, an institute for deaf professional personnel was conducted to provide such persons with deeper ethics, the better to carry out their leadership responsibilities in deaf as well as hearing communities.

6) To serve an information, demonstration and consultative function to the professional community.

Mobile training units that afford special demonstrations and consultant services at professional meetings throughout the country are an example.

7) To encourage a free flow of collaborative communication with professional personnel from the field of the deaf, from schools for the deaf, and from agencies and organizations of and for the deaf.

This is being implemented through correspondence, open conference, seminars, field publications, and representation of field leaders on the Center's local and national advisory councils.

8) To inform the academic community and university research personnel about the Center and about the field of the deaf.

In-service training programs are helping to create a multidisciplinary program for trainees enrolled in the graduate training program.

9) To contribute new information from the field of deafness to the general pool of scientific knowledge.

This is being done through direct collaboration and information exchange with scientists in other disciplines and through publication.

LONG-TERM TRAINING, REHABILITATION SERVICE ADMINISTRATION

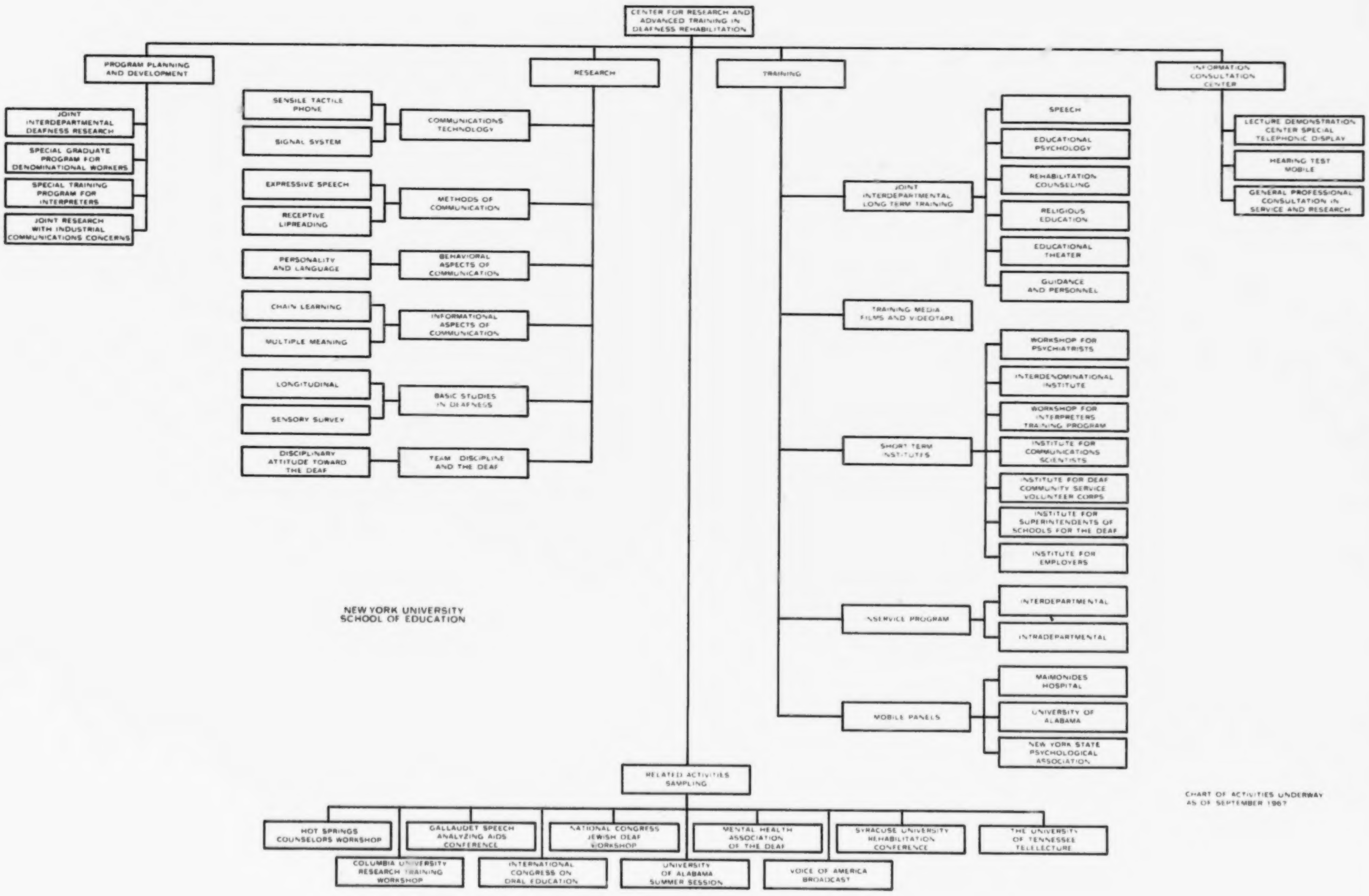
The New York University graduate training program in deafness rehabilitation which was in effect before the establishment of the Center for Research and Advanced Training in Deafness Rehabilitation, is now an integral part of Center activity. Deaf or hearing persons who have strong backgrounds in work with deaf people may qualify as candidates for the Master's degree, the Certificate of Advanced Study, the Ed.D., or the Ph.D. degrees. Their participation in the center program of research and short-term training activities provides opportunity for leadership training, practicum, and independent research investigations.

SOCIAL AND REHABILITATION SERVICE
REHABILITATION AND TRAINING CENTER SHORT-TERM TRAINING PROGRAMS IN DEAFNESS (Pages 92, 93)

Program Description Key: I, Standards and Guidelines; II, Technical Abilities; III, Orientation; IV, Community Development; V, Facility Development

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
R.T.-17 Mohawk Valley Workshop on Deafness September 17, 1966 (Funded privately)	Center for Research and Advanced Training in Deafness Rehabilitation, New York University, Washington Square 3, New York, N.Y. 10003 Jerome Finkelstein	To stimulate an interest in deafness among psychiatrists, psychologists, and social workers in upper New York State. (III)	
R.T.-17 (C-1) Workshop in Rehabilition Services for the Deaf and Hard of Hearing November 29-December 2, 1966 (Funded privately)	Center for Research and Advanced Training in Deafness Rehabilitation, New York University, Washington Square 3, New York, N.Y. 10003 Beatrice F. Jacoby, Ph.D.	To give specialized training to DVR professional personnel who provide rehabilitation services to the deaf and hard of hearing. (II)	"A Report of a Workshop in Rehabilitation Services for the Deaf and Hard of Hearing"
R.T.-17 (C-1) Institute of Deaf Professional Personnel February 3-4, 1967 $5,600	Center for Research and Advanced Training in Deafness Rehabilitation, New York University, Washington Square 3, New York, N.Y. 10003 Edna S. Levine, Ph.D. In collaboration with: The Professional Society of the Deaf, New York, N.Y.	To aid deaf professional persons in defining their responsibility to the deaf community, and to assist them in organizing a responsible program of action. (II)	"Institute of Deaf Professional Personnel"

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description and Type of Training Program	Final Report
R.T.-17 (C-1) Institute for Psychiatrists on Programs of the Deaf April, 1967 Funding: see p. 67-32	Center for Research and Advanced Training in Deafness Rehabilitation, New York University, Washington Square 3, New York, N.Y. 10003 Edna S. Levine, Ph.D. In collaboration with: Research Foundation for Mental Hygiene, Inc., 722 W. 168th Street, New York, N.Y. 10032	To foster a deeper interest and participation of psychiatry in the field of the deaf. (II)	"Psychiatry and the Deaf"
R.T.-17 (C-2) Conference of Communication Executives November, 1966 $200	Center for Research and Advanced Training in Deafness Rehabilitation, New York University, Washington Square 3, New York, N.Y. 10003 Edna S. Levine, Ph.D.	To gain collaborative interest of executives in the communication industries to bring their technological resources to bear on problems of the deaf. (II)	


CENTER FOR RESEARCH AND ADVANCED TRAINING IN DEAFNESS REHABILITATION
PROGRAM PLANNING AND DEVELOPMENT
JOINT INTERDEPARTMENTAL DEAFNESS RESEARCH
SPECIAL GRADUATE PROGRAM FOR DENOMINATIONAL WORKERS
SPECIAL TRAINING PROGRAM FOR INTERPRETERS
JOINT RESEARCH WITH INDUSTRIAL COMMUNICATIONS CONCERNS
RESEARCH
SENSILE TACTILE PHONE
SIGNAL SYSTEM
COMMUNICATIONS TECHNOLOGY
EXPRESSIVE SPEECH
RECEPTIVE LIPREADING
METHODS OF COMMUNICATION
PERSONALITY AND LANGUAGE
BEHAVIORAL ASPECTS OF COMMUNICATION
CHAIN LEARNING
MULTIPLE MEANING
INFORMATIONAL ASPECTS OF COMMUNICATION
LONGITUDINAL
SENSORY SURVEY
BASIC STUDIES IN DEAFNESS
DISCIPLINARY ATTITUDE TOWARD THE DEAF
TEAM DISCIPLINE AND THE DEAF
TRAINING
JOINT INTERDEPARTMENTAL LONG TERM TRAINING
SPEECH
EDUCATIONAL PSYCHOLOGY
REHABILITATION COUNSELING
RELIGIOUS EDUCATION
EDUCATIONAL THEATER
GUIDANCE AND PERSONNEL
TRAINING MEDIA FILMS AND VIDEOTAPE
SHORT TERM INSTITUTES
WORKSHOP FOR PSYCHIATRISTS
INTERDENOMINATIONAL INSTITUTE
WORKSHOP FOR INTERPRETERS TRAINING PROGRAM
INSTITUTE FOR COMMUNICATIONS SCIENTISTS
INSTITUTE FOR DEAF COMMUNITY SERVICE VOLUNTEER CORPS
INSTITUTE FOR SUPERINTENDENTS OF SCHOOLS FOR THE DEAF
INSTITUTE FOR EMPLOYERS
INSERVICE PROGRAM
INTERDEPARTMENTAL
INTRADEPARTMENTAL
MOBILE PANELS
MAIMONIDES HOSPITAL
UNIVERSITY OF ALABAMA
NEW YORK STATE PSYCHOLOGICAL ASSOCIATION
INFORMATION CONSULTATION CENTER
LECTURE DEMONSTRATION CENTER SPECIAL TELEPHONIC DISPLAY
HEARING TEST MOBILE
GENERAL PROFESSIONAL CONSULTATION IN SERVICE AND RESEARCH
RELATED ACTIVITIES SAMPLING
HOT SPRINGS COUNSELORS WORKSHOP
GALLAUDET SPEECH ANALYZING AIDS CONFERENCE
NATIONAL CONGRESS JEWISH DEAF WORKSHOP
MENTAL HEALTH ASSOCIATION OF THE DEAF
SYRACUSE UNIVERSITY REHABILITATION CONFERENCE
THE UNIVERSITY OF TENNESSEE TELELECTURE
COLUMBIA UNIVERSITY RESEARCH TRAINING WORKSHOP
INTERNATIONAL CONGRESS ON ORAL EDUCATION
UNIVERSITY OF ALABAMA SUMMER SESSION
VOICE OF AMERICA BROADCAST

NEW YORK UNIVERSITY
SCHOOL OF EDUCATION

CHART OF ACTIVITIES UNDERWAY
AS OF SEPTEMBER 1967

)

INTERNATIONAL PROGRAM OF THE SOCIAL AND REHABILITATION SERVICE

With the establishment in 1967 of the Social and Rehabilitation Service, the international research and demonstration activities of the Vocational Rehabilitation Administration, Children's Bureau, Welfare Administration and Administration on Aging were united under the Office of International Activities. Authorized by the Agricultural Trade Development and Assistance Act of 1954, as amended, the Office of International Activities and its predecessor agencies have administered a cooperative research and demonstration program in developing countries where excess currencies have been available from the sale of U.S. agricultural commodities.

The program seeks to serve dual purposes, in complementing domestic research and attacking significant social, maternal and child health, rehabilitation and geriatric problems in the foreign countries. It is designed to improve international cooperation in research of universal interest and to carry out U.S. foreign policy objectives. Research grants are awarded to qualified governmental and private non-profit institutions that submit sound research proposals which, in addition to satisfying the above criteria, have received official sanction by the respective governments.

Since the start of the program seven years ago, nearly two hundred projects have been supported in the following countries: Brazil, Burma, India, Israel, Pakistan, Poland, Syria, Tunisia, U.A.R. and Yugoslavia. Another "excess currency" country in which projects are being developed is Ceylon.

Many of these projects have developed or hold promise of developing new methods and techniques for use in improving rehabilitation services to the deaf. A grant awarded by the Vocational Rehabilitation Administration in 1963, enabled Dr. Petar Guberina of Yugoslavia to devise the Verbo-Tonal Method for auditory rehabilitation of profoundly deaf individuals. Other institutions in India, Israel, Pakistan, U.A.R. and Yugoslavia, have sought to expand employment opportunities for the deaf and to enhance their chances for vocational success through improved training and personal adjustment services.

SOCIAL REHABILITATION SERVICE— INTERNATIONAL RESEARCH ON DEAFNESS (Pages 96-98)

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description of Research	Final Report
U.A.R.-8-67 Establishment of a Comprehensive Rehabilitation Center for Vocational Guidance, Personal Adjustment, Prevocational Training and Selective Placement of the Deaf September 1, 1966-August 31, 1969 66,050 Egyptian Pounds $118,880 (equivalent)	Egyptian Association for the Welfare and Rehabilitation of the Deaf, Cairo, U.A.R. Ali Abdel-Ghaffar	To explore ways to open up new employment opportunities and to demonstrate that the deaf are capable, efficient workers.	
Yugo-2-63 Studies of Verbo-Tonal Audiometry December 20, 1962-December 19, 1967 1,066,652 Yugo Dinars $85,332 (equivalent)	University of Zagreb, Institute of Phonetics, Ulica Djure Salaja, Zagreb, Yugoslavia Petar Guberina, Ph.D.	To conduct case studies in the use of restricted bands of frequencies in auditory training of the deaf and hard of hearing.	
Yugo-7-66 Establishment of an Experimental Vocational Guidance and Personal Adjustment Center for the Deaf September 1, 1966-August 31, 1969 2,000,964 New Dinars $237,120 (equivalent)	Federation of the Deaf of Yugoslavia, Box 911, Belgrade, Yugoslavia Dragoljub Vukotic	To set up a comprehensive program for the assessment of the capacities of deaf people and to develop suitable methods for motivation, counseling, and vocational guidance of deaf people.	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description of Research	Final Report
Pakistan-11-67 Establishment of a Pilot Rehabilitation Research and Training Program for the Deaf October 1, 1966-September 31, 1969 217,100 Pakistan Rupees $45,633 (equivalent)	The Association for the Welfare of the Adult Deaf and Dumb, Karachi, West Pakistan M. Y. Butt	The objectives of this project include the study and development of techniques for rehabilitating deaf persons through vocational guidance, personal adjustment services and training in indigenous crafts, and the demonstration that deaf persons are a source of manpower for the continuously expanding industries in Pakistan.	
Israel-24-65 Research and Demonstration Pilot Project on Rehabilitation of Deaf Persons in Israel September 1, 1964-August 31, 1968 303,300 Israeli Pounds $101,100 (equivalent)	The Association of the Deaf and Mute in Israel and the Helen Keller House, 13 Sderoth Yad La-Banim, Tel-Aviv, Israel N. Sade-Sadowsky, M.D.	To assess the training potentialities of 14-18-year-old deaf persons in diamond cutting and polishing and in carpentry and to demonstrate that deaf people are a source of reliable manpower for the continuously expanding Israel industries.	
Israel-32-67 Investigation of the Potentialities of Visual Communication Systems for the Rehabilitation of the Deaf April 1, 1967-March 31, 1970 230,029 Israeli Pounds $76,676 (equivalent)	Hebrew University, Department of Psychology, Jerusalem, Israel I. M. Schlesinger, Ph.D.	To analyze and describe the Israeli sign language; to conduct experiments in teaching Israeli sign language to hearing persons and to experiment on the translatability of Hebrew tests into sign language.	

Grant Number Title Dates of Operation Total Cost	Sponsoring Institution and Project Director	Description of Research	Final Report
India-14-65 Investigation of Techniques for Rehabilitating Deaf Persons November 2, 1964-November 2, 1968 187,099 Indian Rupees $24, 920 (equivalent)	U. P. Deaf and Dumb Institute, Allahabad, U. P., India S. D. Misra	To investigate techniques for rehabilitating deaf persons by means of vocational guidance, training in indigenous crafts and other trades and selective placement.	
India-26-66 An Investigation of the Audiological and Rehabilitation Needs of Persons with Speech and Hearing Disorders December 1, 1965-November 30, 1969 510,824 Indian Rupees $67,214 (equivalent)	Christian Medical College and Hospital, Vellore, South India Y. P. Kapur, M.D.	To develop hearing and speech test procedures based on Indian languages; counseling services suited to local conditions, methods for the local indigenous manufacture of hearing aids, a program for community education and guidance on speech and hearing problems, and expansion of employment opportunities for persons with hearing and speech disorders.	

SOCIAL AND REHABILITATION SERVICE INTERNATIONAL RESEARCH PROJECTS IN THE AREA OF THE DEAF GRANT FUNDS BY FISCAL YEAR

Grant No.	1963	1965	1966	1967
Yugo-2	1,066,652 Yugo Dinars $85,332 (equivalent)			
Israel-24		303,300 Israeli Pounds $101,100 (equivalent)		
India-14		187,099 Indian Rupees $24,920 (equivalent)		
India-26			510,824 Indian Rupees $67,214 (equivalent)	
Yugo-7			2,000,964 New Dinars $237,120 (equivalent)	
Pakistan-11				217,100 Pakistan Rupees $45,633 (equivalent)
Israel-32				230,029 Israeli Pounds $76,676 (equivalent)
U.A.R.-8				66,050 Egyptian Pounds $118,880 (equivalent)
Totals:	$85,332	$126,020	$304,334	$241,189
			Grand Total:	$756,875

CHILDREN'S BUREAU

Social and Rehabilitation Service

(Data furnished by Katherine B. Oettinger, Chief)

I. *Purposes, Activities, Goals and Legislative Authorization*

The Bureau's approach to the problems of children proceeds from concern for the child living with his family or wherever he may live. The interrelationship among the physical, emotional, and social factors in child growth, child health, and child welfare permeates all that this Bureau does and stimulates others to do in research and action for children.

The Bureau studies many types of conditions affecting the lives of children, makes recommendations to improve practices in child health, child welfare, and juvenile delinquency programs, and helps establish standards for the care of children.

In administering grants the Bureau works with State and local health and welfare departments, crippled children's agencies, institutions of higher learning including medical schools and teaching hospitals, and agencies and organizations engaged in child health and welfare research.

The Bureau in carrying out its other functions works with voluntary child health and welfare agencies and with professional and civic organizations.

The Bureau provides the secretariat for the Interdepartmental Committee on Children and Youth which is made up of 12 Federal departments and independent agencies with representatives from 38 operating units of these departments and agencies whose programs affect children and youth.

The Bureau cooperates with other nations in the furtherance of health and welfare activities for mothers and children. It makes plans for long-term and short-term trainees and observers from other countries who come to the United States through the United Nations, World Health Organization, The Agency for International Development, or independently. Upon request, the Bureau assists in the recruiting of maternal and child health and child welfare personnel for service abroad.

Stemming from two acts, but interwoven into one program, are the purposes of the Children's Bureau today:

> To assemble facts needed to keep the country informed about children and matters adversely affecting their well-being.
>
> To recommend measures that will help to advance the wholesome development of children and prevent and treat the

ill effects of adverse conditions.

To give technical assistance to public and voluntary agencies and to citizens' groups in improving the conditions of childhood.

To administer the grants appropriated each year under Title V of the Social Security Act to aid in building the health and welfare of children.

The legal authority of the Children's Bureau for serving the children of the United States is contained in the basic act of April 9, 1912, creating the Bureau (42 U.S.C., Ch. 6) and in Title V of the Social Security Act under delegations by the Secretary of the Department of Health, Education, and Welfare and the Commissioner of Welfare (42 U.S.C., Ch. 7, Subch. V).

Under the basic act of 1912, the Bureau is charged with investigating and reporting "upon all matters pertaining to the welfare of children and child life among all classes of our people."

Under Title V of the Social Security Act, as amended, the Bureau administers grants for eight programs: (1) maternal and child health services; (2) services for crippled children; (3) child welfare services; (4) research, training or demonstration projects in child welfare; (5) special project grants for maternity and infant care; (6) special project grants for health of school and preschool children; (7) training of professional personnel for the care of crippled children, particularly mentally retarded children and children with multiple handicaps; and (8) research projects relating to maternal and child health and crippled children's services.

Training of professional personnel for the care of crippled children - Title V, Part 2, Section 516, Social Security Act - "There are authorized... grants by the Secretary to public or other nonprofit institutions of higher learning for training professional personnel for health and related care of crippled children, particularly mentally retarded children and children with multiple handicaps."

Research projects relating to maternal and child health services and crippled children's services - Title V, Part 4, Section 533, Social Security Act - "There are authorized to be appropriated for each fiscal year ... such sums ... as the Congress may determine to enable the Secretary to make grants to, or jointly financed cooperative arrangements with, public or other nonprofit institutions of higher learning, and public or other nonprofit agencies and organizations engaged in research or in maternal and child health or crippled children's programs, and contracts with public or nonprofit private agencies and organizations engaged in research or in such programs, for research projects relating to maternal and child health services or crippled children's services which show promise of substantial contribution to the advancement thereof."

II. *General Description of Research Grants and Professional Training Programs and Procedures*

Training of Professional Personnel

The Children's Bureau program for supporting training has been developed as a part of a broad program for special projects and demonstrations. The purpose of supporting training projects has been to provide the specialty training needed to insure high quality services for children who are served by the grantee agency.

The Social Security Amendments of 1965 authorize a new program of grants to institutions of higher learning for training of professional personnel such as physicians, psychologists, nurses, dentists, and social workers for health and related care of crippled children, particularly mentally retarded children and those with multiple handicaps.

The purpose of the authorization in Section 516 of the Social Security Act, as amended, is to increase the availability of project grant funds, especially to support training in the University Affiliated Centers under construction in accordance with P.L. 88-164. It will require a considerable expenditure of training funds to carry out the objectives of these centers as well as to increase training of professional personnel for the care of crippled children in other institutions of higher learning.

Research projects relating to maternal and child health and crippled children's services

The purpose of the program of research grants relating to maternal and child health and crippled children's services is to authorize grants to, or contract with, appropriate agencies and organizations for research projects that show promise of substantial contribution to the advancement of these services. Public or other nonprofit institutions of higher learning and public or other nonprofit agencies or organizations engaged in research or in maternal and child health or crippled children's services may participate in the research projects program, which was authorized under section 533 of Title V, Part 4, Social Security Act.

Persons interested in further information about these programs should address their inquiries to the Director of Division of Health Services or to the Director of Division of Research in the Children's Bureau, specifying their special concern and their objectives.

III. *Research and Demonstration Projects in Deafness*

Some of the research supported by the Children's Bureau is related to the prevention of severe hearing impairment, and the provision of a variety of health services to children who are, or who may become deaf, but it is not identified as research in the form of deafness. The projects listed below represent a special concern with deafness.

Grant Number **Starting Date** **Duration** **Cost**	**Project Title and Final Report**	**Sponsoring Institution and Project Director**	**Description of Research**
C-86 (C1) 8/65 - 11/30/67 $43,275	Auditory to Vibration Experience Translation	University of Illinois, College of Medicine, Chicago, Illinois Shirley J. Heinze, Ph.D.	To test use of Several Auditory to Vibration Experience Translators (GAVET) on a group of profoundly deaf children and controls.
H-181 (C1) 7/1/66 - 6/30/68 $36,173	Computerized Objective Auditory Testing in Infancy	University of California Center of Health Science, Los Angeles, California Victor Goodhill, M.D.	To evaluate the use of an average response computer in testing infants suspected of deafness.
C-226 7/1/67 - 6/30/68 $48,563	Evaluation of Assistants in Field Audiology	Ohio State Department of Health, Columbus, Ohio William A. Grimm, Ph.D.	To determine the feasibility of extending scope and quality of services through public health agencies by using assisting personnel.
CB-RB-238 1966 3 years $53,787	Home Training Correspondence Course	John Tracy Clinic, Los Angeles, California Edgar Lowell, Ph.D.	This project will result in material for use with parents

IV. *Training Professional Workers for the Deaf*

These following programs supported by the Children's Bureau have as their purpose the training of audiologists in the identification, diagnoses and non-medical treatment and prevention of severe hearing impairment in children.

Data related to these programs is for FY 1967.

Grant Number Program Title No. of Years in Operation Total Cost	Sponsoring Institution and Program Director	Description and Type of Training	No. and Kind of Students Enrolled
202 Training in Audiology 17 $85,652	John Hopkins University, Medical School, Baltimore, Maryland William Hardy, Ph.D.	Audiologists	Master's and Ph.D. level
Audiology and Speech Pathology Training 12 $71,368	University of Iowa, Iowa City, Iowa James Curtis, Ph.D.	Audiologists	Master's and Ph.D. level
407 Audiology Training 10 $38,515	University of Kansas, Lawrence, Kansas Herbert C. Miller, M.D.	Audiologists	Master's and Ph.D. level
235 Training in Communicative Disorders 2 $74,744	University of Oklahoma, Medical School, Norman, Oklahoma John Keyes, Ph.D.	Audiologists Pediatricians Otolaryngologists	Master's and Ph.D. level
208 Training in Audiology 6 $84,215	Stanford University, Stanford, California Richard Dixon, Ph.D.	Audiologists	Ph.D. level
217 Audiology and Speech Pathology 5 $85,588	Vanderbilt University, Bill Wilkerson Center, Nashville, Tennessee Freeman McConnell, Ph.D.	Audiologists	Master's level
318 Pediatric Audiology 1 $25,392	New York University, New York City, New York Maurice Miller, Ph.D.	Audiologists	Post M.A. level

BUREAU OF EDUCATION FOR THE HANDICAPPED
U.S. OFFICE OF EDUCATION

RESEARCH AND DEMONSTRATION PROJECTS IN DEAFNESS

DIVISION OF RESEARCH

The Division of Research is responsible for stimulating the improvement of educational programs for handicapped children, including the deaf.

LEGISLATIVE AUTHORITY: The passage of P.L. 88-164, late in 1963, will be marked in history as the birthdate of research for handicapped children in the U.S. Office of Education. This law authorized $2 million for both research and demonstration projects relating to the education of handicapped children. Section 302 of P.L. 88-164 has been amended twice since its enactment. Along with increases in funds came increases in flexibility of programs. P.L. 89-105 permitted construction of a comprehensive research and demonstration center; P.L. 90-247 permitted the support of research training and operation of an intramural research program. The original Research and Demonstration Branch of the Division of Handicapped Children and Youth became the Handicapped Children and Youth Branch of a Division of the Bureau of Research in July of 1965. In January of 1967, it became the Division of Research in the Bureau of Education for the Handicapped.

ACTIVITIES: The Division of Research is responsible for stimulating the improvement of educational programs for handicapped children, including the deaf. There are no restrictions placed on the type of projects which can be supported, provided they fit within the broad definition of research or related activities, defined by law to include research, demonstration, surveys, and research training. During the period 1964-1967, 30 projects concerned specifically with the Hearing Impaired have been approved, representing $1,629,639 out of a total obligation for all types of handicap of $12,337,952. Proposals approved were submitted by institutions of higher education, public and private schools, State education agencies, research organizations, and other groups such as hospitals, clinics, residential institutions, professional organizations, foundations, etc.

THE INSTRUCTIONAL MATERIALS CENTERS: The following special education Instructional Materials Centers collect, catalog and classify instructional materials for use by teachers of the deaf. Each Center was planned to establish functional activities to accomplish the objectives of this new effort: (a) a service function; (b) a research and development activity; and (c) stimulation of materials production activity.

The service function includes (a) the acquisition of commercial and teacher-prepared instructional materials; (b) describing, classifying, and organizing these materials; and (c) the dissemination of materials and information to educators.

The research and development phase includes the evaluation of instructional materials and the development and production of new materials on a pilot basis for experimental trial or demonstration to establish their effectiveness.

The stimulation of production phase includes (a) contacting the organizations which have the production capacity (sheltered workshops or commercial publishers) and encouraging them to produce materials which have been found to be effective in the research phase; and (b) consulting with producers to assure that ideas which they believe have merits are given consideration.

Instructional Materials Centers	*Region Served*
Colorado State College Greeley, Colorado 80631 Director: Dr. William Reid Phone: 303/351-2681	Colorado Montana Wyoming New Mexico Utah
Department of Special Education Superintendent of Public Instruction 726 South College Street Springfield, Illinois 62706 Director: Mrs. Lenore Powell Phone: 217/525-2436	Illinois
University of Texas 304 West 15th Street Austin, Texas 78701 Directors: William Wolfe Claude Marks Phone: 512/GR-1-3146	Texas Louisiana Arkansas Oklahoma

University of Southern California School of Education 17 Chester Place Los Angeles, California 90007 Director: Robert McIntyre Phone: 213/749-3121	California Nevada Arizona
Boston University School of Education 765 Commonwealth Avenue Boston, Massachusetts 02215 Directors: Donald Maietta Harold Ruvin Phone: 617/353-3266	Massachusetts Connecticut New Hampshire Maine Vermont Rhode Island
New York State Department of Education Bureau for Physically Handicapped Children Albany, New York 12201 Director: Raphael Simches Phone: 518/474-3995	New York State

OFFICE OF EDUCATION RESEARCH AND DEMONSTRATION GRANTS IN DEAFNESS (Pages 108-117)

(Data furnished by the Bureau of Education for the Handicapped: Division of Research)

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-5-10-123 9/1/64-8/31/65 $27,933	The Assessment of the Written Language of Deaf Students "The Assessment of the Written Language of Deaf Students," unpublished 8/31/65	University of Pittsburgh, Pittsburgh, Pennsylvania E. Ross Stuckless, Ph.D.	This investigation was conducted to describe the written language of deaf students between 10 and 18 years of age in terms of six measurable variables, and to relate these variables to teacher judgments of quality of language. Equations were developed which were considered to be useful instruments for evaluating the written language of groups of deaf students relative to the national population of deaf students represented by the samples.
SAE-7775 5/1/58-9/30/65 $62,952	Cognitive Development and Performance of Children with Normal and Defective Hearing "Cognitive Development and Performance of Children with Normal and Defective Hearing," unpublished 9/30/62	University of Minnesota, Minneapolis, Minnesota Mildred C. Templin, Ph.D.	A comparative, longitudinal study to examine specific performance characteristics of deaf and normal children on selected cognitive tasks using language and nonlanguage techniques.
OEG-5-10-356 6/1/65-1/31/66 $8,972	Teaching of Intonation and Inflections in the Deaf "Teaching of Intonation and Inflections in the Deaf," unpublished 1/31/66	Northeastern University, Boston, Massachusetts Ladislav Dolansky, Ph.D.	To develop and test a self-monitoring method of teaching proper intonation and inflection patterns to the deaf including use of a visual display based on pitch information derived from a live speech signal.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-32-18-0070-1004 6/1/64-5/31/66 $35,999	A Nonverbal Hearing Test for Children with Deafness "A Nonverbal Hearing Test for Children with Deafness," unpublished 5/31/66	Gallaudet College, Washington, D.C. D. Robert Frisina, Ph.D.	Conduction of a series of eight consecutive and related experiments in the development and quantification of vibrotactile conditioning procedures for use in the measurement of hearing in deaf and hearing subjects.
OEG-4-10-033 9/1/63-8/31/66 $91,927	Verbal and Nonverbal Learning in Children Including Those with Hearing Losses Pt. II "Verbal and Nonverbal Learning in Children Including Those with Hearing Losses Pt. II," unpublished 8/31/66	Wayne State University, Detroit, Michigan John H. Gaeth, Ph.D.	An effort to define meaningfulness in normally hearing children as it applies to learning tasks presented auditorily, visually, and audiovisually for expected insight into the use of auditory training with hearing handicapped children.
OEG-32-42-0000-6015 2/1/66-1/31/67 $23,923	The Development of a Test of Deaf Children's Linguistic Competence "The Development of a Test of Deaf Children's Linguistic Competence," unpublished 5/4/67	Lexington School for the Deaf, New York, N.Y. Robert L. Cooper, Ph.D.	To design and develop standardized, paper-and-pencil test of linguistic competence specifically for deaf children that will permit an assessment of deaf children's implicit knowledge of English language rules.
OEG-32-42-0930-6030 5/1/66-1/31/57 $6,292	The Relationship Between Ability to Classify Objects and Achievement in Deaf and Hearing Children "The Relationship Between Ability to Classify Objects and Achievement in Deaf and Hearing Children"	New York University, School of Education, New York, N.Y. Toby R. Silverman, Ph.D.	The application of Wygotsky's theory of conceptual development to children who hear and children who are deaf to obtain comparative data on their categorization behaviors and achievement.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-2-7-068089-0153 9/1/66-2/28/67 $5,395	Training in Visual Perception for Young Deaf Children to Stimulate School Readiness "Training in Visual Perception for Young Deaf Children to Stimulate School Readiness"	Governor Morehead School, Raleigh, North Carolina Rachael F. Rawls	A demonstration to study the effectiveness of a visual training program in stimulating and accelerating progress of young deaf pupils in speech reading, reading words and object association and speech; to determine whether there is apparent lasting carryover value from the training; and to develop class room materials that may be used to develop visual perception skills.
OEG-32-23-0000-1027 6/1/64-11/30/66 $9,984	The Development of A Receptive Communication Scale for Deaf Children "The Development of A Receptive Communication Scale for Deaf Children," unpublished 11/30/66	Illinois School for Deaf, Jacksonville, Illinois Frank B. Withrow, Ph.D.	To develop a communication scale for use with deaf or hard-of-hearing children, which is composed of graded items presented in four communication areas, lipreading, lipreading plus sound, fingerspelling, and sign language.
OEG-1-7-063073-2198 1/1/67-12/31/67 $18,587	Air and Bone Conduction Thresholds of Deaf and Normal Hearing Subjects Before and During the Elimination of Cutaneous	Syracuse University, New York, N.Y. E. Harris Nober, Ph.D.	A comparative experiment to determine means for an accurate assessment of auditory sensitivity.
OEG-7-53-6210-296 6/1/65-5/31/67 $75,473	The Testing and Modification of Overhead Projection Transparencies for Special Use with Classes for the the Deaf	Texas Education Agency, Austin, Texas W. T. Kinniell	To identify the types of changes which are necessary to convert regular visual materials into specialized materials for instruction of deaf students and to develop and make available modified visuals for duplication by interested institutions.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-1-6-062069-1591 6/1/66-5/31/69 $48,282	A Parent-Centered Program for Preschool Deaf Children	Emerson College, Boston, Massachusetts David Luterman, Ph.D.	Preschool instruction of the congenitally deaf child to demonstrate the value of early parental training in the education of the child, and the effect of parental attitudes.
OEG-2-7-070394-3025 4/6/67-4/5/68 $212,658	Materials for the Education of Handicapped Children	George Washington University Washington, D.C. Murdock Head, M.D.	A program to improve the dissemination of information about innovations in deaf education with an ultimate goal to establish centers in various countries for the collection and transmission of information and materials relevant to the education of the deaf.
OEG-2-7-070630-3024 4/15/67-10/30/67 $19,831	Conference on Speech-Analyzing Communication Aids for the Deaf	Gallaudet College, Washington, D.C. James M. Pickett, Ph.D.	A technical conference for acoustic scientists on the topic of special speech analyzers that are under experimental development and testing as new electronic aids for the deaf and the severely hard-of-hearing.
OEG-3-6-068664-1595 6/1/66-5/31/67 $8,066	Visual Language Learning Processes in Deaf Children	Northwestern University, Evanston, Illinois Helmer R. Myklebust, Ed.D.	The objectives in this program are to—(1) demonstrate the value of simultaneous presentation of the speech-read and printed work form in the reading process, (2) provide for the enhancement of the reading process in the deaf child, (3) demonstrate the value of individual attention permitted by use of teaching machines and films, and (4) demonstrate that this approach frees the teacher from other tasks allowing her to engage in more creative endeavors.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-3-6-068522-1555 6/1/66-5/31/67 $8,726	An Exploratory Investigation of the Relationships between Thresholds of Perception and Language Abilities in Adolescent Deaf Children "An Exploratory Investigation of the Relationships between Thresholds of Perception and Language Abilities in Adolescent Deaf Children," un unpublished 8/31/67	Ohio State University, Columbus, Ohio John B. Brannon, Ph.D.	A longitudinal analysis of language growth in deaf children. Specific objectives are (1) to determine the increments of language growth in deaf children over intervals of time in four areas of language. Acquisition—speech comprehension, speaking, reading, and writing, (2) to plot individual and group language growth curves for deaf children over a 3-year period, (3) to try to explain the lack of growth in certain areas, and (4) to define the specific language deficiencies of the deaf.
OEG-5-10-006 8/1/64-12/31/67 $132,630	An English Curriculum for the Deaf Students at the Secondary Level	Gallaudet College, Washington, D.C. Harry Bornstein, Ph.D. William Stokoe, Ph.D.	The preparation of an analytic curriculum in English for deaf students at the secondary level in the development of instructional tools for improving English proficiency.
OEG-1-7-00838-0504 11/1/66-10/31/67 $5,417	A Picture-Identification Test for Hearing-Impaired Children	University of Connecticut, Storrs, Connecticut Mark R. Ross, Ph.D.	To revise and enlarge a picture identification speech discrimination test useful for collecting data which can be used to assist hearing-impaired children make maximum use of their residual hearing.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-2-7-070070-1522 11/15/66-11/14/67 $41,195	Research on Frequency Transposition for Hearing Aids	Gallaudet College, Washington, D.C. James H. Pickett, Ph.D.	The development and testing of methods for altering speech signals better to compensate for serious hearing losses of sensorineural origin with attention focused on those cases where speech reception cannot be sufficiently aided by conventional amplification, because of very poor auditory discrimination in the important speech frequency regions.
OEG-1-7-002540-2006 11/1/66-10/31/67 $33,750	Proposal for a National Research Conference on Day Programs for Hearing-Impaired Children	Columbia University, Teachers College, New York, N.Y. Ann M. Mulholland	A research conference to examine the policies and practices of programs for aurally handicapped children in the local school and to develop guidelines for program organization and administration and research.
OEG-32-15-0180-1019 6/1/64-5/31/67 $54,262	A Project to Develop and Evaluate the Effectiveness of Instructional Materials for the Deaf Designed to Emphasize the Syntactical Meaning of Words	University of Colorado, Speech and Hearing Clinic, Boulder, Colorado Richard F. Krug, Ph.D.	The development of instructional materials for the very young deaf child to emphasize the order of words in using such materials in the expectation for (1) techniques to teach the preschool deaf child word order, (2) teach him to read, and (3) provide a method for him to express himself even before he learns to speak or write.
OEG-32-20-7170-5006 1/1/65-6/30/68 $203,944	Development and Evaluation of Programmed Instruction in the Teaching of Verbs to Deaf Children in the Primary Grades	Atlanta Speech School, Inc., Atlanta, Georgia Robert L. McCroskey, Ph.D. Dorthea Grigonis	A procedure for increasing the efficiency of teaching verbs to deaf children through programmed instruction and the development of a standardized achievement test for verbs which can be used in schools for the deaf.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-32-14-0000-1014 6/1/64-5/31/67 $95,831	Home Teaching for Parents of Young Deaf Children	John Tracy Clinic, Los Angeles, California Edgar L. Lowell, Ph.D.	A demonstration to establish and explore the value of a new instructional program for preschool deaf children and their parents, using training techniques applicable in a normal routine at home as contrasted to customary training activities for children with hearing impairments in a school or clinical environment.
OEG-1-7-008771-0480 11/1/66-4/30/68 $9,220	A Comparative Study of the Most Creative and Least Creative Students in Grades 4 to 6	Boston School for the Deaf, Randolph, Massachusetts Marie S. Gallagher	A test of a number of hypotheses concerning high and low creative deaf students using an abbreviated form of the "Minnesota tests of Creative Thinking."
OEG-1-7-008598-2038 10/3/66-10/3/67 $7,376	A Demonstration Project in Art Education for Deaf Children and Hard-of-Hearing Children and Adults "A Demonstration Project in Art Education for Deaf Children and Hard-of-Hearing Children and Adults," unpublished 10/3/67	Jewish Society for the Deaf, New York, N.Y. Rawley A. Silver, Ed.D.	A project to develop effective procedures for teaching art and assessing visual arts aptitudes and interests for use with the deaf and the hard of hearing.
OEG-3-7-062582-2084 12/1/66-11/3/67 $18,400	Speech Reading Failure in Deaf Children	Northwestern University, Evanston, Illinois Arthur I. Neyhus, Ph.D.	An attempt to gain further understanding of the psychological and neurological processes which result in the failure of the multiple-handicapped deaf to develop speech reading skills in study of the relationship of aphasia for speech reading to the development of remedial techniques attempted for this type of disability.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-32-18-0070-6009 2/1/66-1/31/68 $66,762	An Investigation by School Systems of Procedures in the Development of a Model Reporting System on Hearing Impairment	Gallaudet College, Washington, D.C. Augustine Gentile	The development and evaluation of criteria and procedures for the establishment of a model statistics-reporting system on impaired-hearing school age children. Visits will be made to various agencies to determine what data are now being collected and handled. Forms will be designed and criteria determined. Then the methods will be field tested and evaluated within a five-state area.
OEG-32-52-0450-6007 2/1/66-1/31/69 $103,591	A Home Teaching Program for Parents of Very Young Deaf Children	Vanderbilt University, Nashville, Tennessee Freeman McConnell, Ph.D.	The goal is to detect auditory deficits in children under 3 years of age and to aid in developing the remaining capacities for learning in the home environment, speech, speechreading, and auditory skills, using parents as active training partners. Also, the development of a home teaching manual.
OEG-4-7-061169-0414 11/22/66/-9/25/67 $8,735	A Study of the Effectiveness of the Initial Teaching Alphabet with Three-, Four-, and Five-Year-Old Deaf and Hard-of-Hearing Children	Compton City Schools, Compton City, California Myra J. Taylor	The conduction of investigations on the following four areas—(1) the problem of communication of deaf and hard-of-hearing children, (2) the use of a basic, consistent, representational teaching stimulus for receptive and expressive language, (3) the use of a single, representative phonetic device to develop and facilitate retention of language for 3-, 4-, and 5-year-olds enrolled in an oral-aural integrated type of educational program for the deaf and hard-of-hearing, and (4) the use of a single phonetic device in the teaching of deaf and hard-of-hearing 3-, 4-,

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-4-7-061169-0414 11/22/66-9/25/67 (Continued)			and 5-year-olds as the most effective measure, involving economical use of time, necessary in the teaching of a pattern of communication together with a reinforcement of conceptualizations.
OEG-32-42-0000-6032 3/1/66-6/30/68 $96,302	Identification Assessment and Prediction of Reading Competency in Deaf Children	Lexington School for the Deaf, New York, N.Y. Joseph Resenstein, Ph.D.	An analysis of the reading competency of deaf children in the dichotomy of poor and competent readers based upon scores of three indices of reading ability.
OEG-2-6-061924-1890 6/27/66-6/26/69 $59,418	Enlarging the Sign Language for Instructional Purposes	Gallaudet College, Washington, D.C. Harry Bornstein, Ph.D.	A proposal to (1) create between 500 and 1,000 new signs for English terms for which no signs presently exist, (2) determine how well these are recognized, acquired, and retained, and (3) develop improved methods of teaching them. English terms for which no signs presently exist will be nominated and grouped into clusters applicable to professional divisions of the college. These signs will be taught to upperclass students who will be tested. At completion of the project new signs will be taught routinely on campus.
OEG-1-6-062017-1588 6/1/66-8/31/67 $28,033	The Development and Evaluation of Procedures for Using the Voice Visualizer as an Aid in Teaching Speech to the Deaf	Boston University, School of Education, Boston, Massachusetts Wilbert Pronovost, Ph.D.	The development and testing of prototype "Voice Visualizers" and associated materials and procedures for use as visible speech units with the deaf.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEG-4-7-002353-2051 11/7/66-6/30/68 $34,991	Relationship between Audiologic Status, Linguistic Skills, Visual-Motor Perception and Academic Achievement of Deaf Children	University of Texas, Austin, Texas Grace H. Hanson	The basic objective of this study is to determine whether significant interrelationships exist between audiologic status, linguistic skills, visual-motor perception, and academic achievement among selected groups of deaf children in a residential school.
OEG-32-31-7518-5030 5/22/65-6/21/67 $27,850	The Influence of Allergic Rhinitis on the Speech Education of the Deaf	Boston School for the Deaf, Boston, Massachusetts James A. Cavanaugh, M.D.	To ascertain the frequency of an allergic diathesis in deaf children and to determine the influence of this disease on the hearing, speech development, and academic achievement of the deaf.

BUREAU OF EDUCATION FOR THE HANDICAPPED

U.S. OFFICE OF EDUCATION

PROFESSIONAL TRAINING PROGRAMS IN THE AREA OF DEAFNESS

(Data furnished by Dr. Joseph Rosenstein, Division of Training Programs: Preparation of Professional Personnel in the Education of Deaf Children)

LEGISLATIVE AUTHORITY: On November 3, 1966, President Johnson signed into law the Elementary and Secondary Amendments of 1966 which created a new Title VI, Education of Handicapped Children, in the Elementary and Secondary Act of 1965. As an outgrowth of the new Title VI, the Commissioner of Education announced, on January 12, 1967, the establishment of a Bureau of Education for the Handicapped. This Bureau is the principal agency in the Office of Education for administering and carrying out programs and projects for the training of teachers of the handicapped and research in such education and training. Included in the Bureau's three divisions is the Division of Training Programs, which contains the activities that involve Federal assistance to colleges and universities and State education agencies to provide training in order to increase the Nation's manpower in the education of the handicapped. This aid is authorized by Public Law 85-926, as amended by three subsequent pieces of legislation.

PURPOSE: Grants are awarded to institutions of higher education and to State education agencies to assist in the preparation of persons employed or about to be employed as teachers of handicapped children, supervisors of teachers, speech pathologists and audiologists, and other specialists. Colleges and universities may also receive grants for training programs for those who are to be involved in the preparation of teachers and for those engaged in or preparing to engage in relevant research.

Institutions of higher education and State education agencies may submit applications for grants in any or all areas of the handicapped included under Public Law 85-926, as amended; i.e., mentally retarded, deaf, speech and hearing impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health impaired (including learning disabilities), and special education administration. Programs may interrelate the above areas for preparing personnel in the education of the multiply handicapped.

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There are five basic types of grants: undergraduate traineeships, graduate fellowships, summer session traineeships, special study institutes, and program development grants. An institution of higher education may submit applications for different types of grants in one or more areas of personnel preparation. With the exception of program development grants, State education agencies also may apply for different types of grants in one or more areas of personnel preparation.

ACTIVITIES: For the academic year 1968-69, the following are the types of grants available:

Undergraduate Traineeships

Junior year trainees receive a stipend of $300 to assist them in their junior academic year of full-time undergraduate study. It is expected that institutions which have been awarded junior year traineeships will utilize them for purposes of recruiting outstanding students into the field of education of the handicapped.

Senior Year Traineeships

Senior year trainees receive a stipend of $800 for the senior academic year of full-time undergraduate study.

Graduate Fellowships

The purpose of grants for graduate study is to assist colleges and universities in the preparation of professional personnel at the master's and post-master's levels. Fellowships are awarded for full-time study for one academic year *as defined by the institution.*

Graduate fellowship grants for the preparation of administrators of special education must be for study at the post-master's level only.

Master's Level Fellowships: Fellows enrolled for full-time graduate study at the master's level receive a stipend of $2,200, and an allowance of $600 for each dependent.

Post-Master's Level Fellowships: Fellows enrolled for full-time graduate study at the post-master's level will receive a stipend of $3,200 and an allowance of $600 for each dependent.

Summer Session Traineeships

Assistance may be provided for training programs for full-time summer study, as defined by the institution. Pre-, post-, and intersessions are not interpreted as full-time summer sessions.

A summer session trainee pays no tuition or fees and receives a stipend of $75 per week. Generally, summer session traineeships are for purposes of in-service education and the major utilization of these traineeship grants should be through State education agencies.

Special Study Institutes

The institute is a multi-purpose training vehicle, in that it may be held for various types of personnel, at various levels of preparation, and for varying periods of time (but for not less than three consecutive days).

An institute affords the opportunity to provide a period of intensive study and experiences for a specific group of participants. Institutes may be developed by State education agencies or institutions of higher education; however, it is assumed that the primary responsibility for the development of institutes rests with State education agencies.

Institutes may be held for:

1. Personnel already trained in one or more areas of the education of the handicapped.
2. Personnel who work with the handicapped, although it may not be their full-time responsibility. This could include elementary supervisors, general school administrators, school psychologists, school social workers, counselors, house parents, recreation and physical education workers, and professional aides.
3. Experienced elementary and secondary teachers who are planning to enter the field of teaching the handicapped.

An institute participant pays no tuition or fees and receives a stipend of $75 per week.

Program Development Grants

Program development grants are for the purpose of assisting colleges and universities in the development or expansion of a program for the preparation of professional personnel in the education of the handicapped. These grants are intended to support new professional positions, secretarial and consultant services, travel for staff and consultants, teaching supplies and materials, books, and communications costs for items such as telephones, stamps, and brochures.

The grants are for the period from June 1, 1968, through August 31, 1969, and seldom exceed $20,000. An institution may apply once for the renewal of a program development grant in an area in which a previous award was made. Program development funds may not be used for building construction or to purchase equipment. Indirect costs are not allowed.

An institution may submit an application for a program development grant in an area of the handicapped in which another application has been made. For example, an institution of higher education may wish to seek a grant for the development of its doctoral program while seeking support for fellowships for students in its master's level program.

The staff member identified as the program development coordinator should be free from full-time teaching and other academic duties in order to devote sufficient time and effort to the development of the new or expanding program.

Procedure for the Evaluation of Applications

Applications submitted by eligible colleges and universities will be read, evaluated, and rated by consultants. Each area is represented by a review panel of consultants. Membership on these review panels includes individuals from local school systems, State education agencies, and colleges and universities. The general guidelines to be used by the review panels in evaluating applications are as follows:

1. The institution's program is of high quality, is well-coordinated, and shows promise of achieving the objectives of the application.
2. The full-time instructional staff is experienced and competent to conduct the proposed program.
3. Substantive content and the organization of required study are appropriate for the attainment of professional competence and demonstrate an awareness of new approaches, techniques, and instructional materials.
4. Suitable practicum facilities are to be utilized for observation, participation, practice teaching, laboratory or clinical experience, internships, and other supervised experiences. Such facilities should be accessible to the institution of higher education and staffed by qualified personnel. The scope and continuity of such experiences for each student should be specified and should be of adequate length.
5. An application should reflect a commitment of the institution to the development of the training program for which a grant is requested. Also, it should indicate how the institution will assist in meeting the local, regional and national needs of the handicapped.

OFFICE OF EDUCATION PROGRAM FOR THE PREPARATION OF PROFESSIONAL PERSONNEL IN THE EDUCATION OF DEAF CHILDREN, BUREAU OF EDUCATION FOR THE HANDICAPPED

University and Year Program Was Established	Program Director	1967-68 Traineeship Awards	Amount of Total Grant Award
University of Alabama 1962	T. Earle Johnson, Ph.D.	9 - MA 20 - SSI	$ 77,547
University of Arizona 1957	George J. Leshin, Ph.D.	5 - Sr 7 - MA	57,900
University of Arkansas 1952	Lucy M. Moore, M.A.	6 - Sr 16 - Summer	36,000
California State College at Los Angeles 1951	Harry V. Wall, Ph.D.	9 - MA	51,300
San Francisco State College 1948	Priscilla P. Muir, Ed.D.	6 - MA	34,200
University of Southern California 1951	Edgar L. Lowell, Ph.D.	8 - MA 20 - Summer	63,600
Colorado State College 1959	Tony D. Vaughn, Ph.D.	3 - Sr	10,800
University of Denver 1967	Virginia Heidinger, Ph.D.	PDG	19,936
Gallaudet College 1891	D. Wilson Hess, Ph.D.	19 - MA 40 - SSI	168,300
Florida State University 1967	Gladys Crawford, M.S.	PDG	19,202
Emory University 1938	Marijene Duff	3 - MA	17,100
DePaul University 1961	F. Eugene Thosure, M.A.	6 - MA	64,200
MacMurray College 1846	Patricia Stafford	5 - Sr	18,000
Northwestern University 1956	Helmer R. Myklebust, Ed.D.	4 - PM 10 - Summer	34,800
University of Illinois 1948	Stephen P. Quigley, Ph.D.	4 - MA 4 - PM	45,600
Ball State University 1953	J. Dean Twining	7 - Sr 2 - MA	36,600
University of Iowa 1936	Clifford Howe, Ph.D.	1 - Sr 1 - MA	9,300
University of Kansas Medical Center 1951	June Miller, Ed.D.	12 - MA 2 - PM	91,800

Fellowships	Traineeships
MA - MA, MS, MED, etc.	Sr - Senior Year Traineeships
PM - Post-Masters	SSI - Special Study Institutes
	Summer - Summer Session

PDG - Program Development Grant

University and Year Program Was Established	Program Director	1967-68 Traineeship Awards	Amount of Total Grant Award
Boston University 1961	Wilbert Pronovost, Ph.D.	11 - MA	$ 62,700
Smith College 1867	Helen E. Rees, Ph.D.	20 - MA 60 - Summer	168,000
University of Massachusetts 1867	Kenneth R. Gough, Ph.D.	2 - MA	
Eastern Michigan University 1925	Sophia French, M.A.	6 - Sr 5 - Summer	26,100
Wayne State University 1936	John J. Lee, Ph.D.	8 - Sr 2 - MA 2 - PM	51,600
University of Minnesota 1962	Maynard C. Reynolds, Ph.D.	3 - MA 1 - PM	22,800
Fontbonne College 1846	Sister James Lorene, Ed.S.	15 - Sr	54,000
Washington University 1914	S. Richard Silverman, Ph.D.	9 - Sr 26 - MA 1 - PM	186,300
Municipal University of Omaha 1951	Kathleen McKinney	5 - MA	28,500
Trenton State College 1883	E. D. Longenecker, Ph.D.	5 - Sr	18,000
Eastern New Mexico University 1962	John R. Cochran, Ph.D.	7 - MA	39,900
Canisius College 1914	Sister Mary	16 - MA 25 - Summer	113,700
Hunter College 1961	John D. Harrington, Ed.D.	6 - MA	34,200
New York University 1908	Merrill T. Hollinshead, Ph.D.	9 - MA	51,300
St. University of New York at Geneseo 1967	Mabel Talbot, Ed.D.	PDG	19,950
Teachers College, Columbia University 1935	Anne M. Mulholland, M.A.	23 - MA 6 - PM	165,300
Appalachian State Teachers College 1903	Burkett Bergl	5 - MA	28,500
Lenoir Rhyne College 1894	W. Clyde Taylor, Ph.D.	4 - Sr	14,400

Fellowships
MA - MA, MS, MED, etc.
PM - Post-Masters

PDG - Program Development Grant

Traineeships
Sr - Senior Year Traineeships
SSI - Special Study Institutes
Summer - Summer Session

University and Year Program Was Established	Program Director	1967-68 Traineeship Awards	Amount of Total Grant Award
Minot State College 1962	Florence O. Lake	5 - Sr 1 - MA	$ 23,700
Kent State University 1949	Louis Fleigler, Ph.D.	4 - Sr 3 - MA	39,000
University of Cincinnati 1962	Roberta R. Truax	6 - Sr	21,600
University of Oklahoma Medical Center 1947	Eugene O. Mencke, Ph.D.	10 - MA	57,000
Lewis & Clark College	H. William Brelje	8 - Sr 4 - MA	51,600
Oregon College of Education 1960	Josephine Carr, M.A.	15 - MA	85,500
Pennsylvania State University 1963	George Haspiel, Ph.D.	7 - Sr 5 - MA	53,700
University of Pittsburgh 1926	William Craig, Ph.D.	10 - MA 2 - PM 30 - SSI	81,229
Augustana College 1955	John J. Gonzales	4 - Sr	14,400
George Peabody College for Teachers 1963	Sam Ashcroft, Ed.D.	4 - Sr	14,400
The University of Tennessee 1930	B. Robert Gonzales	5 - Sr 5 - MA	46,500
Trinity University 1954	June Grant (Interim Dir.)	5 - Sr	18,000
University of Texas 1949	Lennart L. Kopra, Ph.D.	10 - Sr 4 - MA	67,800
University of Utah 1963	Reid C. Miller	6 - MA	34,200
University of Virginia 1966	Jean C. Ervin, Ph.D.	8 - MA	45,600
University of Wisconsin at Milwaukee 1913	Alice Streng, M.A.	6 - Sr 4 - MA	44,400
52 Universities		138 - Sr 296 - MA 22 - PM 3 - PDG 161 - Summer 145 - SSI	$2,651,514

Fellowships
MA - MA, MS, MED, etc.
PM - Post-Masters

PDG - Program Development Grant

Traineeships
Sr - Senior Year Traineeships
SSI - Special Study Institutes
Summer - Summer Session

MEDIA SERVICES AND CAPTIONED FILMS

(Data furnished by James J. Kundert, Program Specialist)

Media Services and Captioned Films is a $3 million program in the Division of Education Services, Bureau of Education for the Handicapped, U.S. Office of Education.

The Bureau of Education for the Handicapped is one of the newer bureaus in the Office of Education, having been established in January, 1967. Establishment of the bureau represents the Federal Government's commitment to provide special education to the handicapped, creating a bridge to self-sufficiency and self-respect for handicapped children. The Bureau, in addition to supporting the captioned films program, funds research and demonstration projects for the handicapped. It also provides sholarships for undergraduate and graduate students preparing to work with the handicapped and gives financial aid to States to aid their own programs for the handicapped, based on their particular needs.

The Media Services and Captioned Films program is the cumulative result of years of effort on the part of educators of the deaf and the deaf handicapped, in an effort to alleviate the ever-widening educational, cultural and social gulf that has long been the particular bane of the hearing handicapped. The program had its actual beginning at the American School for the Deaf in Hartford, Connecticut in 1950. Now, new technology is aiding a program that is furnishing a wealth of visual stimuli to offset the limited audio experiences received through an impaired sense mechanism.

Although a success from the time of its inception as a private venture, the program needed more financial support than could be supplied through private sources. The possibilities of Federal Government support were explored, and through the efforts of the Vocational Rehabilitation Administration of the Department of Health, Education, and Welfare, Congress was convinced of the need of such a measure and responded by passing special legislation. The National Association of the Deaf, the National Fraternal Society of the Deaf, the Conference of Executives of American Schools for the Deaf, the Alexander Graham Bell Association for the Deaf and other organizations, along with numerous individuals, gave their active support to the enactment of Public Law 85-905 in September, 1958, providing that a loan service of captioned films for the deaf be instituted in the Department of Health, Education, and Welfare for the following specified objectives:

1. to bring to deaf persons understanding and appreciation of those films which play such an important part in the general and cultural advancement of hearing persons;
2. to provide, through these films, enriched educational and cultural experiences through which deaf persons can be brought into better touch with the realities of their environment; and
3. to provide a wholesome and rewarding experience which deaf persons may share together.

To carry out the provisions of this law, the Secretary was authorized among other things to acquire films by purchase, lease or gift and to provide for their captioning and distribution. The U.S. Office of Education was appointed to administer the fledgling program.

Federal funds for the program did not become available until July, 1959. Dr. John A. Gough, formerly principal of the Kendall School for the Deaf and director of the teacher training program at Gallaudet College, was selected to head the program. The voluntary dissolution of the private group, Captioned Films for the Deaf, Inc., and the donation of its entire film library to the Government did much to get the Federal program started on October 1, 1959.

The service of supplying films was accepted at once. The demand was so great that Congress enlarged the program with two sizable pieces of legislation. Public Law 87-715, passed in 1963, increased the original authorization and broadened the scope of the program to include research and training activities. A second amendment, Public Law 89-258, which became effective October 1, 1965, raised the authorized budget ceiling for several consecutive fiscal years. The law also revamped the objectives specified in the original legislation, permitting the program to make progress in other areas where the needs of the deaf had not been met. These objectives are two-fold in nature.

1) To provide enriched educational and cultural experiences for deaf persons by means of a free loan service of acquired or specifically produced captioned films.
2) To promote the educational advancement of deaf persons by:
    a) carrying on research in the use of educational media for the deaf.
    b) producing and distributing educational media for the deaf and for parents of deaf children and other persons who are directly involved in work for the advancement of the deaf or who are actual or potential employers of the deaf.

c) training persons in the use of educational media for the instruction of the deaf.

Significant strides were made by the Captioned Films program during 1967 under an operating budget of $2,745,000. This is reflected in the following program developments:

Acquisitions included 52 general interest films, 45 educational films, 14 filmstrips and 23 free or sponsored films which were made available by government agencies and private enterprise. During the year 1,000 overhead projectors, 1,000 filmstrip projectors and 2,000 screens and supporting equipment were furnished to schools for the deaf.

Original productions embraced 74 filmstrips, two 16mm teacher training films, sixty-three "single concept" 8mm films for language arts instruction, and 140 scripts for future production of films and filmstrips. A Study Guide project produced teachers' guides for 75 educational films.

To date, some 480 teachers of the deaf, representative of both residential and day school programs for the deaf throughout the nation, have participated in training institutes in the area of educational media utilization. These institutes are offered at four university-based regional media centers for the deaf. A preponderance of those administering programs for the deaf have attended three annual symposiums on research and utilization of educational media for teaching the deaf held at the University of Nebraska. In all, media workshops ranging from 2 days to 6 weeks in length have reached some 1,600 teachers out of a total of 5000. In addition, a special workshop was held utilizing a new technique to aid the deaf called "Cued Speech." This system combines speech reading and hand cues to clarify non-visible speech movements.

In 1967 training was conducted in 43 states and doubled the number of persons reached by this activity. Other training projects funded included such widely diverse areas as instruction in basic electronics assembly, film-handling techniques, pre-vocational guidance, American History, printing, typing, fingerspelling, and key punch operation.

Although no clear line of demarcation exists among research and training activities conducted under the Captioned Films program, some projects lend themselves solely to research of a developmental nature. Among these are a curriculum project in the area of the education of the deaf, a survey of library services in schools for the deaf, a project in strengthening the visual perception of deaf children, another to develop media for the reinforcement of language instruction, and the development of auditory training materials for use with the deaf. Seven research and development projects were in process during 1967, all of which were continuing from previous years and centered on aspects of the communication problem.

Demonstration projects dealt with media training of the mentally retarded deaf, programmed language instruction to facilitate the education of the deaf, a project in teaching speech to the deaf and a media saturation project through workshops and demonstrations conducted by the Southwest Regional Media Center for the Deaf. This center has also been contracted to plan for future activities in curriculum service and instructional systems.

Showings of general interest and educational films in schools, churches, and clubs totaled 52,084 with an audience of 1,258,593, representing an increase of approximately 50% over the previous year. Two hundred fourteen additional groups were registered for service, bringing the total to slightly over 1,600. This represents a growth rate of 15%.

Distribution of other educational media such as filmstrips reached an estimated 90% of all educational programs for the deaf in the United States and 95% of the hearing-impaired children in school.

The transition from a limited film service to one that encompasses the sweeping area of multi-media utilization led Congress to consider the development of this program for an even greater role . . . that of providing media services to all areas of the handicapped, including the mentally retarded, hard of hearing, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or other health-impaired children who by reason of their handicaps require special education and related services.

Headquartered in Washington, the program is now identified as Media Services and Captioned Films in the Division of Educational Services of the Bureau of Education for the Handicapped. Under its new banner, this advanced Federal program for the deaf, conceived to fulfill a vital need, continues its dynamic benefits for the handicapped.

MEDIA SERVICES AND CAPTIONED FILMS RESEARCH AND DEMONSTRATION PROJECTS IN DEAFNESS

DIVISION OF EDUCATIONAL SERVICES, BUREAU OF EDUCATION FOR THE HANDICAPPED, OFFICE OF EDUCATION

(Pages 129-131)

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEC-4-7-000269-0269 7/15/64-7/15/67 $90,240	Strengthening the Visual Perception of Deaf Children "Strengthening the Visual Perception of Deaf Children"	New Mexico State University, Las Cruces, New Mexico 88001 Helen Marshall, Ph.D.	A proposal to test the effects of two training programs in visual perception with pre-school deaf children and to test visual and tactile materials.
OEC-2-7-00073-0073 10/1/66-10/1/67 $62,438	Demonstration Project for the Training of the Mentally Retarded Deaf through Film Media "Demonstration Project for the Training of the Mentally Retarded Deaf through Film Media"	Catholic University of America, Washington, D.C. 20017 Max G. Frankel, Ph.D.	A survey of existing programs for mentally retarded deaf in the United States to establish criteria for identification and to develop educational media and programs employing the Functional Teaching of the Mentally Retarded approach.
OE-6-19-089 3/1/66-3/1/67 $59,961	Teaching Speech to the Deaf "Teaching Speech to the Deaf"	John Tracy Clinic, Los Angeles, California 90007 Edgar Lowell, Ph.D.	Preparation and evaluation of materials for the improvement of the teaching of speech to deaf children in the development of instructional films and audiotapes designed to form core of a course in the teaching of speech.
OE-6-19-057 6/18/63-6/18/68 $592,601	Project LIFE (Language Instruction to Facilitate Education	The National Education Association, Washington, D.C. 20016 Harley Z. Wooden	To develop better methods and facilities for teaching language to deaf children - including production of special books, programmed filmstrips and 8mm motion pictures and picture dictionary.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OE-6-19-057 **(Continued)**	"Project LIFE (Language Instruction to Facilitate Education)"		
OE-6-19-074 5/25/64-5/25/66 $116,351	Project to Develop Media for the Reinforcement of Language Instruction "Project to Develop Media for the Reinforcement of Language Instruction"	Illinois School for the Deaf, Jacksonville, Illinois 62650 Frank B. Withrow, Ph.D. and Philip Cronlund	The development and testing of films compromising an experimental program of language development which uses systematic application of audiovisual aids to reinforce classroom teachers program for children with hearing impairment.
OEC-2-7-000195-0195 11/64-11/66 $61,177	Standards for School Library Services in Schools for the Deaf "Standards for School Library Services in Schools for the Deaf"	Convention of American Instructors of the Deaf, Washington, D.C. 20002 Patricia Cory	The development of standards for school library services in schools for the deaf.
OE-5-19-054 12/5/63-12/5/65 $40,442	SIGHTS AND SOUNDS: An Auditory Training Program for Deaf Children "SIGHT AND SOUNDS: An Auditory Training Program for Deaf Children"	American School for the Deaf, West Hardford, Connecticut 06107 E. B. Boatner	Development of auditory training materials including filmstrips and audio tapes.
OEC-2-7-002704-2704 2/10/67-10/10/67 $28,926	Cued Speech Training Project "Cued Speech Training Project"	Gallaudet College, Washington, D.C. 20002 Orin Cornett, Ph.D.	A demonstration and workshop to teach teachers of the deaf to use Cued Speech.

Grant Number Starting Date and Duration Total Amount	Project Title and Final Report	Sponsoring Institution and Project Director	Description of Research
OEC-3-7-003068-3068 1963-1968 $287,461	Workshop for Improving Instruction of the Deaf "Workshop for Improving Instruction of the Deaf"	Ball State University, Muncie, Indiana 47306 Donald Ferguson, Ph.D.	To make a study of curricula in the field of deaf education - review of curricular materials from public schools - curriculum guides will be written.

TRAINING FOR PROFESSIONAL WORKERS FOR THE DEAF
DIVISION OF EDUCATIONAL SERVICES, BUREAU OF EDUCATION FOR THE HANDICAPPED, OFFICE OF EDUCATION

(Pages 132-135)

Grant Number Program Title Starting Date Years in Operation Total Cost	Sponsoring Institution and Program Director	Description and Type of Program	Number and Description of Students Enrolled
OEC-1-7-000211-0211 Northeast Regional Media Center 9/1/65 2 $159,581	University of Massachusetts, Amherst, Massachusetts 01002 Raymond Wyman, Ph.D.	Conduct training, research and development in the area of educational and related media for improvement of instruction of the deaf, develop and utilize media in professional preparation of teachers, supervisors and others in the field, establish and expand needed media programs and services in 14-state area (in-service training programs, publications and consultations).	60 Teachers of the Deaf
OEC-3-7-000199-0199 Midwest Regional Media Center 9/1/65 2 $355,010	University of Nebraska, Lincoln, Nebraska 68508 Robert E. Stepp, Ph.D.	Design and development of instructional media for teaching the deaf, planning and conducting of symposium on research and utilization of educational media, planning and conducting an educational media institute, establish an area program for schools for the deaf located within Midwest region, provide the services of consultants and research people to schools for the deaf within the region.	60 Teachers of the Deaf
OEC-2-7-000235-0235 Southern Regional Media Center 9/1/65 2 $156,366	The University of Tennessee Knoxville, Tennessee 37916 William Jackson, Ph.D.	Conduct training, research and development in the area of educational and related media for improvement of instruction of the deaf, develop and utilize media in professional preparation of teachers,	60 Teachers of the Deaf

Grant Number Program Title Starting Date Years in Operation Total Cost	Sponsoring Institution and Program Director	Description and Type of Program	Number and Description of Students Enrolled
OEC-2-7-000235-0235 (Continued)		supervisors and others in the field, establish and expand needed media programs and services in 12-state area (in-service training programs, publications and consultations).	
OEC-4-7-000183-0183 Southeast Regional Media Center 9/1/65 2 $252,879	New Mexico Foundation, Inc. Las Cruces, New Mexico 88001 Marshall Hester	Training in utilization of instructional media in institutions involved in training teachers of the deaf, conducting of workshop and demonstrations of media techniques, planning for future activities in curriculum service and instructional systems.	60 Teachers of the Deaf
OEC-4-7-000047-0047 Basic Electronic Assembly Project 6/1/67 1 $28.717	Graphic Films Corporation, Hollywood, California 90038 Lester Novros	Production of three complete 35mm slides, units on Basic Electronic Assembly which comprise a system of automated self-instruction to fill an existing need for employment-preparedness training of the deaf.	3 Teachers of the Deaf
OEC-3-7-003019-3019 Course in Film Handling Techniques 4/1/67 13 months $4,398	Indiana State School for the Deaf, Indianapolis, Indiana 46205 Jacob L. Caskey	Presentation of a training course in the area of film handling, care, editing, splicing, shipping, etc., offered to selected students in the school to prepare them for outside employment.	12 Deaf Students

Grant Number Program Title Starting Date Years in Operation Total Cost	Sponsoring Institution and Program Director	Description and Type of Program	Number and Description of Students Enrolled
OE-6-19-056 Project Guidepost 10/1/65 1 $37,212	Oregon College of Education, Monmouth, Oregon 97361 Clifford L. Corley	Development and field testing of 21 four-minute film loops and teacher and student guides in the area of guidance for deaf students at or near graduation level.	None
OEC-1-7-00005-0005 Course in Film Handling Techniques 2/1/67 1 $12,272	New York School for the Deaf, White Plains, New York 10603 Roy M. Stelle	Operation of a training course for selected students from the school in the area of film handling, care, editing, splicing, shipping, etc., to prepare them for outside employment.	12 Deaf students
OE-6-19-102 Media Workshop in American History 6/1/66 1 $21,705	Indiana School for the Deaf, Indianapolis, Indiana 46205 John Olson	Development of multi-media materials for use in teaching first semester American history to deaf students at the secondary level.	None
OEC-2-7-000037-0037 Research, Writing and Production of Filmstrips and Scripts 7/7/66 1 $30,701	Creative Arts Studio, Inc. Washington, D.C. 20001 Philip Arnest	Complete production of 500 copies of each of three primary level filmstrips and scripts for 12 series of 10 primary level filmstrips.	12 Teachers of the Deaf

Grant Number Program Title Starting Date Years in Operation Total Cost	Sponsoring Institution and Program Director	Description and Type of Program	Number and Description of Students Enrolled
OEC-4-7-003054-3054 Workshop for the Development and Evaluation of Study Guides for Educational Films 3/1/67 9 months $10,260	Washington State School for the Deaf, Vancouver, Washington 98661 Archie Stack	To conduct a workshop for the development and evaluation of caption scripts for educational films.	11 Teachers of the deaf
OEC-1-7-002713-2713 Workshop for the Development and Evaluation of Study Guides for Educational Films 2/1/67 9 months $10,679	Governor Baxter State School for the Deaf, Portland, Maine 04104 Joseph P. Youngs, Jr.	To conduct a workshop for the development and evaluation of caption scripts for educational films.	11 Teachers of the deaf
OEC-1-7-002989-2989 Printing Training Films 12/1/66 1 $31,955	Graphic Arts Films, Inc. Greenwich, Connecticut 06830 Gregory Cecala	Development of scripts for production of films on platen press operation, linotype and intertype printing operation, training loops for platen press film and training loops for linotype and intertype films.	None

NATIONAL INSTITUTE OF NEUROLOGICAL DISEASES AND BLINDNESS PUBLIC HEALTH SERVICE

(Data furnished by Dr. Eldon L. Eagles, Assistant Director)

I. *PURPOSE, ACTIVITIES, GOALS AND LEGISLATIVE AUTHORIZATION*

The National Institute of Neurological Diseases and Blindness conducts, fosters, and coordinates research on the causes, prevention, diagnosis, and treatment of the neurological and sensory disorders of mankind, and conducts basic research in related scientific disciplines. In fulfilling these responsibilities, the Institute:

(1) Provides leadership, counsel, technical advice and guidance in developing and maintaining a nationwide research and research training effort in the area of its program responsibilities.

(2) Administers a program of grants-in-aid for research to public and private institutions and individuals in fields related to its areas of interest, including research project, program project, and center grants.

(3) Administers a program of training grants and awards to increase the availability of trained professional research manpower in areas related to the program responsibilities of the Institute.

(4) Conducts a diversified program of intramural and collaborative research in its own laboratories, branches, and clinics.

(5) Administers a program of scientific information exchange through which the results of scientific investigators are rapidly disseminated to the scientific community.

(6) Collaborates with the Neurological and Sensory Disease Service Branch of the Division of Chronic Diseases, Bureau of Disease Prevention and Environmental Control, DHEW, in a program of collecting and developing information related to neurological and sensory diseases. It also disseminates material prepared for the education and information of professional and lay individuals and groups so that it may foster the widespread application of new research findings which have been obtained through grants, contracts, special projects, and cooperative agreements.

Authorization:

On August 15, 1950, President Harry S. Truman signed Public Law 692, 81st Congress, establishing NINDB.

Hearing and Speech

NINDB grants for individual research projects in disorders of hearing and equilibrium, and disorders of speech and other higher central nervous system functions, numbered 195 in fiscal year 1967 and involved awards amounting to over $7 million. This is approximately 10 percent of the Institute's research grant support in the neurological and sensory diseases. The following items illustrate the wide range of projects:

(a) NINDB-supported scientists demonstrated a method for faster and more efficient delivery of an adequate dose of ultrasonic energy into the labyrinth in treating Meniere's disease without severely damaging the facial nerve.

(b) Two grantees established that quantitative measurement of airflow during speech can help physicians diagnose different disorders of the larynx.

(c) A mechanism within the neuron was described which indicated that the interplay of excitatory and inhibitory postsynaptic potentials is important in localizing the directional origin of sound.

(d) In addition to the conductive hearing losses produced by stapes fixation, otosclerosis was shown to produce a variety of other hearing impairments due to involvement of the inner ear causing neurosensory hearing impairment.

(e) There has long been a significant difference between specifications set for American puretone audiometers and the British type used not only in Great Britain but also in most of Europe. The adoption of a new International Standard for reference zero levels for audiometers promises to resolve much of the resulting confusion in reporting scientific study results and in the interpretation of audiometric tests. Institute grantees have contributed significantly to the development of the new International Standard.

Approach to Prevention of Sensory Disorders

In its program to prevent deafness and speech disorders, the Institute is supporting five major clinical research centers and program projects. These cover a wide range of activities; the study of diseases of the ear, the mechanism of hearing, disturbance of language perception and formulation, and the normal and abnormal processes of speech production. A temporal bone bank program also has been established to clarify the nature of the diseases producing deafness.

Other Efforts to Remedy Hearing Loss

Efforts are also under way to develop other means of communication for those with severe hearing loss. For those with even minimal residual hearing, the use of hearing aids is proving very beneficial, especially in the child's efforts at acquisition of language. In others, vibrations through the skin may be utilized for hearing. To date, efforts to provide a sensory input directly to the brain, bypassing the ear, have produced only crude noises. Much more must be learned about the neural processes of hearing before a meaningful signal can be introduced into the system.

Clinical and Research Centers

A major target is to establish, within the Intramural Research, NINDB, a Branch of Neuro-otolaryngology which will serve as a national focal point for research on the ear and its diseases. The target date for this is 1968, when the new laboratory building for NINDB will be completed.

The Institute is supporting five multidisciplinary research centers where projects covering various aspects of human communications research is being carried out, both in the clinical and laboratory areas. The goal is to have some 12 of these by 1970. In addition to these research centers, clinical out-patient centers are being established. A specialized information center for Hearing, Speech, and Disorders of Human Communication has been established and within two years this should be fully operational. The Clinical Centers are located at:

(1) *University of Chicago*

This center concentrates on the clinical investigation of disorders involving principally hearing and equilibrium. It is supported by various laboratory studies including electrophysiology of the cochlea, factors influencing location of sound in space, bone conduction of sound, eustachian tube function, vestibular nerve pathways in animals, and the response of humans to various postural tests. This center has aided in developing the temporal bone banks program of the Institute in cooperation with the Deafness Research Foundation. This program is an attempt to further the understanding of hearing impairment by the study of temporal bones of known cases of deafness bequeathed to medical institutions. Also at this institution, a unit of research beds was opened earlier this year to hospitalize cases of poorly understood deafness and vertigo. The Johns Hopkins University Department of Otolaryngology, the University of California at San Francisco, and Baylor University at Houston, Texas, have also established bone bank centers.

(2) *Central Institute for the Deaf*

The Center at the Central Institute for the Deaf, St. Louis, carries on studies of normal auditory function including parallel studies of communication by vision, touch, and vibration. Other studies include disorders of auditory communication including loss or impairment of hearing; disorders of auditory perception; failure to attach meaning to sounds, and difficulties in understanding, in formulating, and in producing spoken language. Work of the research department in this center is divided into four areas represented by the laboratories of physiology, electroencephalography, psychology, and electrical engineering and physical acoustics.

(3) *Princeton University*

The nature of hearing is the subject of study at Princeton University. This program encompasses the investigation of hearing in all its fundamental aspects including sound conduction in the ear, physiology of the cochlea and the auditory nervous system, overstimulation and protection of the ear and a comparative study of hearing mechanisms and their functions in various animals and reptiles. Facilities to study hearing in the ultrasonic range have been developed as part of a program to study the evolution of the ear involving hearing in bats, amphibians, reptiles, and several mammals.

(4) *The Kresge Institute*

The Kresge Hearing Research Institute at Ann Arbor, Michigan, is working on the causes of deafness.

(5) *University of Florida*

Scientists at the University of Florida are working on the physics and physiology of voice production, the psychology of speech behavior in children, parent-child communication and first language acquisition, linguistics, and noise pathology.

In addition to these centers, the Institute's cerebrovascular center at Boston University is emphasizing research on aphasia.

Research Programs

The Research Grants Program of the National Institute of Neurological Diseases and Blindness is designed to stimulate and support scientific investigations in the neurological, sensory, communicative, and related fields. It is an award of funds for research made by NINDB to an institution on behalf of an individual. Awards are made following review and recommendation of approval of an application by the Advisory Council of NINDB.

NINDB supports research concerned with the cause, development, diagnosis, therapy, and prevention of such disorders as: multiple sclerosis, cerebrovascular diseases, epilepsy, muscular dystrophy, cerebral palsy, mental retardation, encephalitis, glaucoma, cataract, diabetic retinopathy, Meniere's syndrome, aphasia, otosclerosis, and other disorders of the nervous system, vision, hearing, equilibrium, and speech.

Support is given for basic neuroscience research as well as clinical studies. Areas of basic science support include neuroanatomy, neurochemistry, neuropathology, epidemiology, neuropharmacology, neurophysiology, neuroradiology, sensory physiology, psychology, physics, and related disciplines.

This program is intended to supplement rather than replace support from foundations, private philanthropies, or private health organizations in the scientific fields related to health problems.

Basic Neuroscience Research

Within the intramural program, at the Bethesda laboratories, research has focused on the basic mechanism and structure of the ear, especially the anatomical passageways for hearing and the feedback mechanism of nerves from the brain to the ear. The present research program has resulted in a further clarification of the details of structure of the inner ear. It has specified more precisely the pathways and terminations of afferent and efferent nerve fibers between brain and ear. The discovery of this efferent nerve system and its function is one of the most significant advances in recent years in understanding how we hear.

Neuroanatomy and Neurophysiology

Other studies of the auditory pathways are revealing in increasing detail not only the intimate structure of the auditory apparatus for converting sound waves to electrical messages, but also the complex of central brain connections that distribute and operate upon the incoming auditory information.

The Collaborative Perinatal Project

The Institute's Collaborative Perinatal Project at 14 collaborating institutions for the study of 50,000 mothers (from early pregnancy) and their offspring continues to provide a vast store of information regarding causes of communicative disorders. This information will receive further analysis as the project continues its observation of developing children. In addition, advantage will be taken of the unique opportunity to carry out special adjunct studies on the mechanisms involved in development of communicative disorders.

Variety of Factors

Because of the importance of prenatal and perinatal factors in communicative disorders, the Institute has included evaluation of these factors in the Collaborative Project and in its perinatal research laboratories in Bethesda and Puerto Rico. Factors being investigated include maternal infection with a variety of virus diseases (particularly rubella), drug action, asphyxia at birth, and metabolic disorders.

Program Direction and Trends

Council Subcommittee

The NINDB Subcommittee on Human Communication and its Disorders was formed by action of the Institute's Council early in 1965 to review the field and identify areas of need. Specifically, it was asked to provide: (1) a definition in extension of the field of human communication and its disorders with emphasis on "the Communication Sciences"; (2) a determination of the prevalence of various disorders; (3) an outline of unresolved problems and unexpected needs. Clearly, this is an extensive undertaking. It has been estimated that it would require three years, and that it would probably terminate with a national conference early in 1968.

Institute Conference at Princeton

Last year the NINDB Council brought together at Princeton some of the world's outstanding authorities and researchers on the problems of "Brain Mechanisms Underlying Speech and Language." In many ways this conference offered a resumé of the present state of knowledge. The anatomy is far better known than the physiology of these brain systems; and various details of language behavior are far better understood than the reasons for them.

Communications Information Center

Rapidly increasing research and publication of results require some mechanism for review, evaluation, and dissemination of findings, to facilitate early application of these findings and effective research planning. For this reason, the Institute is supporting a Specialized Information Center for Hearing, Speech, and Disorders of Human Communication, at Johns Hopkins University, which reviews and evaluates published material, and carries on an active program of dissemination of information in a variety of ways. In addition, the Institute will expand, broaden, and correlate its research program in this area to provide the necessary support to a center of this type. The Information Center is expected to prove assistance to the Institute in planning both its extramural and intramural programs.

Training Programs

The Institute training grant programs and its support of fellowships and career development awards form a most important part of the program to combat communicative disorders. Trained professional personnel to carry on teaching and training programs and to conduct the needed research have been significantly increased in numbers, but many more are needed. The Institute provides support to 69 training programs in otolaryngology, audiology, and speech pathology, and sensory physiology. There are 377 postdoctoral students receiving training in these programs. Developmental training grants to eight programs in otolaryngology are currently in effect. Support for twelve Career Development Awards and two Career Awards have been provided for outstanding scientists of proven competence.

The Institute's training program has shown considerable growth since its inception in 1957, and it is gratifying to find many of the early trainees now directing both teaching and research programs of their own. This latter outcome of the training has resulted in an increased need for further training support.

NATIONAL INSTITUTE OF NEUROLOGICAL DISEASES AND BLINDNESS
OTOLARYNGOLOGY
TRAINING PROGRAMS CONCERNING HEARING DISORDERS (Pages 144-153)

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees*	Amount of Grant	Final Report
NB-05199-09	James Harrill, M.D. Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N.C.	Otolaryngology Audiology	1958	5	$79,304	X
NB-05282-08	Jay Melrose, Ph.D. State Univ. of Iowa, Iowa City, Iowa	Medical Audiology	1959	2	$45,862	X
NB-05286-08	William Hardy, Ph.D. Johns Hopkins Univ., Baltimore, Md.	Medical Audiology	1959	2	$17,944	X
NB-05308-07	Ernest Wever, Ph.D. Princeton Univ., Princeton, N.J.	Sensory Physiology Audiology	1960	2	$4,044	X
NB-05329-06	Raymond Carhart, Ph.D. Northwestern Univ., Evanston, Illinois	Audiology Otolaryngology	1961	3	$91,820	X
NB-05397-04	William Saunders, M.D. Ohio State Univ. Research Foundation, Columbus, Ohio	Otolaryngology Audiology	1963	3	$110,142	X

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*All Post doctoral

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees *	Amount of Grant	Final Report
NB-05419-03	Earl D. Schubert, Ph.D. Stanford Univ., Stanford, Calif.	Medical Audiology	1964	3	$47,609	X
NB-05437-04	Paul H. Ptacek, Ph.D. Western Reserve Univ., Cleveland, Ohio	Speech Pathology Audiology	1963	2	$87,975	X
NB-05476-02	Ben H. Senturia, M.D. Washington Univ. School of Medicine, St. Louis, Missouri	Otolaryngic Pathology Otolaryngology	1965	2	$83,293	X
NB-05479-02	John J. O'Neill, Ph.D. Univ. of Illinois Urbana, Illinois	Speech Pathology Audiology	1965	3	$42,915	X
NB-05499-01	Claude S. Hayes, Ph.D. Univ. of Wisconsin, Madison, Wisconsin	Audiology	1966	3	$69,676	X

(X: No final report. Current active program.)

ADDITIONAL TRAINING PROGRAMS IN OTOLARYNGOLOGY

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees *	Amount of Grant	Final Report
NB-05121-10	John R. Lindsay, M.D. Univ. of Chicago, Chicago, Illinois	Otolaryngology	1957	2	$52,220	X
NB-05362-05	R. L. Schiefelbush, Ph.D. Univ. of Kansas, Lawrence, Kansas	Communicative Disorders	1962	2	$96,184	X
NB-05453-03	Harvey L. Garner, Ph.D. Univ. of Michigan, Ann Arbor, Michigan	Communicative Sciences	1964	2	$56,040	X
NB-05475-02	Paul Moore, Ph.D. Univ. of Florida, Gainesville, Fla.	Communicative Sciences	1964	4	$56,040	X
NB-05487-02	G. O. Proud, Ph.D. Univ. of Kansas, Kansas City, Kansas	Otorhinolaryngology	1965	2	$46,059	X
NB-05523-01	A. G. Di Buasui, M.D. Georgetown Univ., Washington, D.C.	Otolaryngology	1966	2	$97,506	X
NB-05531-01	Irving M. Blatt, M.D. Louisiana State Univ., New Orleans, La.	Otolaryngology	1966	4	$84,726	X
NB-05535-01	John T. Dickinson, M. D. Mercy Hospital, Pittsburgh, Penna.	Otolaryngology	1966	2	$16,008	X

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees *	Amount of Grant	Final Report
NB-05553-01	James A. Donaldson, M.D. Univ. of Washington Seattle, Washington	Otolaryngology	1966	4	$57,284	X
NB-05557-01	Godfrey E. Arnold, M.D. Univ. of Mississippi, Jackson, Miss.	Otolaryngology, Communicative Disorders	1966	3	$61,772	X
NB-05582-01	F. Blair Simmons, M.D. Stanford University, Stanford, Calif.	Otolaryngology	1966	3	$65,303	X
NB-10024-01*	M. M. Hipskind, M.D. Stritch School of Medicine, Chicago, Illinois	Otolaryngology	1966	2	$23,470	X
NB-10027-01*	Edwin N. Rise, M.D. Univ. of Tennessee Medical Units, Memphis, Tenn.	Otolaryngology	1966	1	$25,056	X
NB-10033-01*	Harold N. Cooley, M.D. Univ. of Alabama Medical Center, Birmingham, Ala.	Otolaryngology	1966	4	$24,213	X
NB-10052-01*	Clifford G. Grulee, M.D. Univ. of Cincinnati, Cincinnati, Ohio	Otolaryngology	1966	3	$30,780	X

* Developmental Graduate Training Program

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees *	Amount of Grant	Final Report
NB-10054-01*	Philip M. Shumrich, M.D. West Virginia Univ., Morgantown, W. Va.	Otolaryngology	1966	3	$31,325	X
NB-05116-10	Brian F. McCabe, M.D. State Univ. of Iowa, Iowa City, Iowa	Otolaryngology	1957	2	$90,200	X
NB-05129-10	John E. Bordley, M.D. Johns Hopkins Univ. School of Medicine, Baltimore, Maryland	Otolaryngology	1957	3	$75,990	X
NB-05137-10	Royal C. Hayden, M.D. Henry Ford Hospital, Detroit, Michigan	Otolaryngology	1957	8	$12,920	X
NB-05143-10	Harold Schuknecht, M.D. Massachusetts Eye and Ear Infirmary, Boston, Mass.	Otolaryngology	1957	10	$88,846	X
NB-05144-09	John F. Daly, M.D. New York Univ. Medical Center, New York, N.Y.	Otolaryngology	1958	3	$39,283	X
NB-5190-09	Joseph H. Ogura, M.D. Washington Univ., St. Louis, Missouri	Otolaryngology	1958	3	$39,996	X

*Developmental Graduate Training Program

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees *	Amount of Grant	Final Report
NB-05201-08	James R. Chandler, M.D. Univ. of Miami School of Medicine, Miami, Florida	Otolaryngology	1959	3	$62,895	X
NB-05203-06	Joseph L. Goldman, M.D. Mount Sinai Hospital, New York, N.Y.	Otolaryngology	1961	5	$16,464	X
NB-05208-09	Cyrus L. Blanchard, M.D. Univ. of Maryland School of Medicine, Baltimore, Maryland	Otolaryngology	1958	2	$48,825	X
NB-05213-09	John A. Kirchner, M.D. Yale University School of Medicine, New Haven, Conn.	Otolaryngology	1958	2	$62,509	X
NB-05229-05	Francis L. Lederer, M.D. Univ. of Illinois College of Medicine Chicago, Illinois	Otolaryngology	1961	2	$117,765	X
NB-05230-08	Walter Work, M.D. Univ. of Michigan Medical School, Ann Arbor, Michigan	Otolaryngology	1959	2	$85,889	X
NB-05234-08	Daniel C. Baker, M.D. College of Physicians and Surgeons, New York, N.Y.	Otolaryngology	1959	2	$37,328	X

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees *	Amount of Grant	Final Report
NB-05248-07	Francis A. Sooy, M.D. Univ. of California School of Medicine, San Francisco, Calif.	Otolaryngology	1960	6	$54,752	X
NB-05276-05	George F. Reed, M.D. State Univ. of New York School of Medicine, Syracuse, N.Y.	Otolaryngology	1962	5	$48,475	X
NB-05284-07	Rufus C. Morrow, M.D. Univ. of Vermont College of Medicine, Burlington, Ver.	Otolaryngology	1960	3	$40,000	X
NB-05285-07	Clay W. Whitaker, M.D. Univ. of Southern Calif., Los Angeles, Calif.	Otolaryngology	1960	1	$57,449	X
NB-05287-07	Newton D. Fischer, M.D. Univ. of North Carolina, Chapel Hill, N.C.	Otolaryngology	1960	2	$19,639	X
NB-05291-07	Fred Harbert, M.D. Jefferson Medical College, Philadelphia, Pa.	Otolaryngology	1960	10	$ 2,430	X
NB-05295-07	Joel J. Pressman, M.D. Univ. of California School of Medicine, Los Angeles, Calif.	Otolaryngology	1960	2	$85,289	X

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees *	Amount of Grant	Final Report
NB-05315-06	G. S. Fitz-Hugh, M.D. Univ. of Virginia School of Medicine Charlottesville, Va.	Otolaryngology	1961	3	$12,566	X
NB-05344-06	S. Richard Silverman, M.D. Central Institute for the Deaf, St. Louis, Missouri	Auditory Physiology	1961	2	$85,289	X
NB-05349-06	Lawrence R. Boies, M.D. Univ. of Minnesota, Minneapolis, Minn.	Otolaryngology	1961	5	$47,234	X
NB-05358-06	William R. Hudson, M.D. Duke University Medical Center, Durham, N.C.	Otolaryngology	1961	5	$31,83[illegible]	X
NB-05384-05	Harold G. Tabb, M.D. Tulane Univ. of Louisiana, New Orleans, La.	Otolaryngology	1962	4	$36,783	X
NB-05385-05	G. T. Singleton, M.D. Univ. of Florida College of Medicine, Gainesville, Fla.	Otolaryngology	1962	3	$31,485	X
NB-05418-03	James B. Snow, M.D. Univ. of Oklahoma Medical Center, Oklahoma City, Okla.	Otolaryngology	1964	3	$32,159	X

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees *	Amount of Grant	Final Report
NB-05420-04	Harold Westlake, Ph.D. Northwestern Univ., Evanston, Illinois	Speech Pathology	1963	4	$53,714	X
NB-05425-04	James F. Curtis, Ph.D. State Univ. of Iowa, Iowa City, Iowa	Speech Pathology	1963	3	$47,760	X
NB-05453-04	Bobby R. Alford, M.D. Baylor University College of Medicine, Houston, Texas	Otolaryngology	1963	2	$38,199	X
NB-05439-04	John S. Turner Jr., M.D. Emory University School of Medicine, Atlanta, Ga.	Otolaryngology	1963	3	$76,161	X
NB-05441-02	Richard W. Hanckel, M.D. Medical College of South Carolina, Charleston, S.C.	Otolaryngology	1965	2	$20,507	X
NB-05446-03	Frederic L. Darley, Ph.D. Mayo Association, Rochester, Minn.	Speech Pathology	1964	2	$21,904	X
NB-05467-02	G. Jan Beekhuis, M.D. Wayne State Univ. College of Medicine, Detroit, Michigan	Otolaryngology	1965	2	$40,431	X

Grant Number	Program Director and Institution	Type of Training Program	Starting Date	Number of Trainees *	Amount of Grant	Final Report
NB-05472-02	David D. DeWeese, M.D. Univ. of Oregon School of Medicine, Portland, Oregon	Otolaryngology	1965	2	$61,632	X
NB-05504-02	William G. Hemenway, M.D. Univ. of Colorado Medical Center, Denver, Colorado	Otolaryngology	1965	3	$46,588	X
NB- 5507-02	Paul H. Ward, Ph.D. Vanderbilt Univ. School of Medicine, Nashville, Tenn.	Otolaryngology	1965	2	$86,686	X

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*All Postdoctoral

(X: No final Report. Current active program.)

NATIONAL INSTITUTE OF HEALTH RESEARCH GRANTS TO EXTRAMURAL RESEARCH CENTERS FOR STUDY OF DEAFNESS (Pages 154-159)

* - Project is completed   ** - Extended commitment
Final reports are not yet available on these research projects

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
3358 6/61-9/67 9/68** $1,057,290	Sensory Disease Clinical Research Center Hart, C.W.J. "Vestibular paralysis of sudden onset and probably viral etiology," **Annals of Otology, Rhinology, and Laryngology** 74(1):33, Mar 1965; Lindsay, J.R. "Viral labrinthitishistopathologic characteristics," **Acta Oto-laryng** 63:138-43, 1967; "Sensorineural deafness," **Arch Otolaryng** 82: 322, 1965; "Microsurgery of the ear," **Surg Clin N Am** 46:112, 1966	The University of Chicago, 5801 S. Ellis Ave., Chicago, Illinois 60637 Frank W. Newell, M.D.	This Sensory Disease Clinical Research Center works with a unit of the Multicategorical Clinical Research Center at the University of Chicago in Otolaryngology and Ophthalmology for studying the poorly understood types of deafness and/or vertigo in patients combining clinical with basic research on the vestibular and auditory systems.
3768* 1/62-12/67 $273,889	Support of the Midwestern Temporal Bone Banks Center (No author) "The temporal bone banks program for each research-I. Technique for acquiring and preparing the human temporal bone for the study of middle and inner ear pathology, II. Directory of temporal bone banks," **Trans Amer Acad Ophthal Otolaryng** Sep-Oct 1966; Lindsay, J. R. "The vestibular system in multiple	University of Chicago, 5801 S. Ellis Ave., Chicago, Illinois 60637 John R. Lindsay, M.D.	To acquire well-documented pathological specimens for the study of inner ear pathology in deafness and vertigo; to prepare suitable visual material for use by the medical profession in training otologists and pathologists in the proper removal of temporal bones; to design and prepare scientific exhibits for use at major and regional medical meetings.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
3768* (Continued)	sclerosis, a clinical-histopathologic study," **Laryngoscope** 75:1031, Jul 1965		
6593 7/66-12/67 12/69** $28,667	Southern Temporal Bone Banks Research Center Guilford, F.R., Williams, G.H., Halpert, B. "Homologous lyophilized vein: experimental study for tympanic closure in dogs," **Arch Otolaryng** 81: 577-9, Jun 1965; Guilford, F.R. "Repositioning of the incus," Laryngoscope 75(2):236-42, Feb 1965	Baylor University College of Medicine, 1200 Moursund Avenue, Houston, Texas 77025 Frederick R. Guilford, M.D.	Receives and answers inquiries regarding deafness research and the program of the Center; collects pledges and clinical information on patients who bequeath their temporal bones to the Program; coordinates the acquisition and distribution of the temporal bones for processing after donor dies; provides clinical information to Temporal Bone Banks Lab. processing the specimen. In cooperation with Deafness Research Foundation conducts a program of dissemination of information to interested individuals or organizations on ear research. Center also responsible for preparing and showing educative films and exhibits for meetings, conferences or seminars. Distributes pledge forms and informative brochures dealing with the program to medical profession.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6827 9/66-8/67 8/73** $182,819	Integrative Approaches to Neurobiological Problems Snider, R.S. "Functional alterations of cerebral sensory areas by the cerebellum," **Conference, The Cerebellum**, Amsterdam, 1965 (In Press); Hoffer, B.J., Ratcheson, R.A., Snider, R.S. "The effects of stimulation of the cerebellum on the circulatory system." **Fed Proc** (In Press)	University of Rochester, River Campus Station, Rochester, New York 14627 Ray S. Snider, Ph.D.	The program includes four projects: studies with neural transplants in salamanders, artificial auditory end organ, cerebellum (ultrastructural activities related to electrical activity) investigation of the biochemical basis of audiogenic seizures. These research projects will be integrated functionally with morphological and neurochemical studies. The ultimate objective of the 2nd project is to develop a technique for the construction of an auditory end organ for use with the deaf or partially deaf.
3798 6/62-9/67 9/69** $736,701	The Nature of Hearing Crowley, D.E., Hepp-Reymond, M., Tabowitz, D., Palin, J. "Cochlear potentials in the albino rat," **The Journal of Auditory Research** 5:307-16, 1965; Wever, E.G. "The electrical potentials of the cochlea," **Physiol Rev** 46:102, 1966; Wever, E.G. "Vocalization and hearing in the leopard lizard," **Proc Nat Acad Sci** 55:98, 1966	Princeton University Princeton, New Jersey 08540 Ernest Glen Wever, Ph.D.	An investigation of the fundamental processes of hearing: sound conduction in ear, physiology of cochlea, auditory nervous system, problems of deafness, comparative study of hearing throughout the vertebrates and higher invertebrates. Results obtained by methods (recording of electrical potentials in sensory and neural elements of auditory system during acoustic stimulation, conditioned response and electrodermal tests of hearing in animals, and psychophysical procedures with human subjects) are intercorrelated and compared with anatomical and histological observations, and considered in relation to auditory theory.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
3856 5/62-9/67 9/69** $1,506,541	Auditory Communication and its Disorders Davis, H. "Reference levels and hearing levels in otology," **Ann Otol** 75(3): 808-18, 1966; Davis, H., Goodman, A.C. "Subtractive hearing loss, loudness recruitment and decruitment," **Ann Otol** 75(1), 87-94, Mar 1966; Kryter, K.D., Ward, W.D., Miller, J.D., Eldredge, D.H. "Hazardous exposure to intermittent and steady-stale noise," **J Acoust Soc Amer** 39(3): 451-64, Mar 1966	Central Institute for the Deaf, 818 S. Euclid Ave., St. Louis, Mo. 63110 Ira J. Hirsh, Ph.D.	Application to clinical audiometry in young children of computer-derived electrocortical responses to sound; analysis of processes in the inner ear and auditory nerve; psychophysical studies of masking, temporal perception, signal detection and residual hearing capacities of the deaf; development of language and utilization of different hearing aid systems by deaf children; behavioral, physiological and anatomical studies of the aftereffects of exposure of animals to noise; establishment of discrimination learning and learning sets in animals; measurement and prediction of noise in electroacoustic systems and the ear, and computer-derived measurements of signals in such noise.
5221 10/64-9/67 9/71** $354,952	Studies in Clinical Neurology Bender, M.B. "An analysis of auditory perceptual defects with observations on the localization of dysfunction," **Brain** 88:675, 1965; "Examination of vestibulo-oculomotor function," **J Mt Sinai Hosp** 33:243, 1966; "Acoustic wave-form in relation to auditory evoked potentials," Neurology 16:313, 1966; "Optic illusions in vestibular system disease," **Proc Int Sympo Vestibular Oculomotor Problems,** Jap Vesti Soc, Tokyo p. 129, 1965	The Mount Sinai Hospital, 50th and 100th Street, New York, New York 10029 Morris B. Bender, M.D.	Investigation of disordered perception on patients with disease of the central nervous system to develop additional insight into nature of normal perceptual mechanisms and patterns of their development and dissolution.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5785 9/65-8/67 8/72** $464,179	Causes of Deafness Lawrence, M. "Temporal bone study: Cholesteatoma," **Arch Otol** 82:660, Dec 65; Lawrence, M. "Temporal bone study: Hemangioendotheliosarcoma," Arch Otol 83:392, 1966; Lawrence, M. "Auditory reaction time and the derivation of equal loudness contours for the monkey," **J Exp Anal Behav** 9:135, 1966; Lawrence, M. "Cytoarchitecture of Corti's organ," **Scientific Exhibit, Am Acad Ophthal Otolaryng**, Chicago, Nov. 65	The University of Mich., Ann Arbor, Mich. 48104 Merle Lawrence, Ph.D.	Basic research activities of the Kresge Hearing Research Institute into the mechanisms and basic processes of hearing, and causes of deafness using multi-disciplined approaches (auditory physiology, neurophysiology, cytoarchitecture of organ of Corti, comparative psychoacoustics, histopathology of temporal bones).
6346 1/66-12/67 12/69** $41,445	Support for the Eastern Temporal Bone Banks Center Bordley, J. E., Ruben, R. J., Lieberman, A. T. "Human Cochlear potentials," **The Laryngoscope** 74(4): 463-79, Apr 1964; Bordley, J. E. "Otological assessment," **Report of the Proceedings of the International Congress on Education of the Deaf**, U.S. Gov't Printing Office, Document No. 106:226-36, 1964	The Johns Hopkins Univ., 725 N. Wolfe Street, Baltimore, Md. 21205 John E. Bordley, M.D.	Funds are requested for the support of the operation of the Eastern Temporal Bone Banks Center for five years since it acts as a coordinating focus for the twelve temporal laboratories now actively engaged in research on deafness in the Eastern United States.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6347 1/66-12/67 12/69** $37,744	Western Temporal Bone Banks Center Sooy, F.A., Owens, E., Theurer, D. "Stapedectomy in obliterative otosclerosis," **Ann Otol, Rhinol and Laryngol** 73(3):679, Sep 1964; Sooy, F.A. "A clinical and laboratory evaluation of tympanoplasty utilizing canal wall pedicle skin grafts," **Laryngoscope** 74:979, 1964	University of California, San Francisco Medical Center, San Francisco, California 94122 Francis A. Sooy, M.D.	Supporting a Western Temporal Bone Banks Center to acquire pathological temporal bones for the study of inner ear pathology in deafness and vertigo cases, and to maintain up-to-date files of medical information on each donor.
6459 2/66-1/68 1/73** $441,019	A Communication Sciences Research Program	University of Florida Gainesville, Fla. 32603 Paul Moore, Ph.D.	Developing an integrated program of research in Communication Sciences by scientists with various specialties; experimental phonetics, psychoacoustics, frequency discrimination, acoustic physiology, psycholinguistics, experimental linguistics, and communication.

NATIONAL INSTITUTE OF HEALTH EXTRAMURAL GRANTS ON VESTIBULAR SYSTEM (Pages 160-165)

* - Project is completed ** - Extended commitment
Final reports are not yet available on these research projects

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
1330 5/57-4/68 4/69** $351,117	Clinical and Experimental Research Frederickson, J. M., Fernandez, C. "Vestibular disorders in fourth ventricle lesions," **Arch Neurol 80:521-40, Nov 1964**; Mair, I.W.S., Fernandez, C. "Pathological and functional changes following hemisection of the lateral ampullary nerve," **Acta Otolaryng 62(6):513-31, 1966**	University of Chicago, 950 E. 59th Street, Chicago, Ill. 60637 Cesar Fernandez, M.D.	Studies on the effects of vestibular stimulation upon eye movements during sleep in children and on the bio-physical characteristics of the labyrinth of the cat measuring the diameter of membranous and osseous semi-circular canals, their length, et cetera, and using the data to calculate the constants of the fundamental differential equation of the cupulaendolymph system.
1538* 4/58-8/67 $87,590	Vestibular System in the Cat and Monkey McMasters, R.E., Weiss, A.H., Carpenter, M.B. "Vestibular projections to the nuclei of the extraocular muscles. Degeneration resulting from discrete partial lesions of the vestibular nuclei in the monkey," **Am J Anat 118:163-94, 1966**; Stein, B.M., Carpenter, M.B. "Central projections of portions of the vestibular ganglia innervating specific parts of the labyrinth in the Rhesus Monkey," **Am J Anat 120:281-318, 1967**	College of Physicians and Surgeons, Columbus Univ., 630 West 168th Street, New York, New York Malcolm B. Carpenter, M.D.	To explore the anatomical connections and organization of the vestibular system in the brain stem, cerebellum, and spinal cord of the monkey and cat to determine: the regional distribution of primary vestibular fibers from various parts of the vestibular end organ, the regional distribution within the vestibular nuclei of cerebellar efferent fibers, and the specific locations and terminations of secondary vestibular fibers.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
1833 9/58-8/67 8/68** $118,453	Quantitative Study of Vestibular Function in Man	New York Univ. Medical Center, 550 First Avenue, New York, New York 10016 John F. Daly, M.D.	Patients with disorders of the peripheral and central vestibular mechanism will be studied and a simultaneous bithermal caloric test with electronystagmography will be further developed to study the effects of prolonged irrigation of the cats' ears and ototoxicity in the cat; to complete the optokinetic drum.
3451 1/62-12/67 12/68** $160,528	Random Noise Analysis in Vestibular Evaluation	University of Florida, College of Medicine, Gainesville, Fla. 32603 George T. Singleton, M.D.	The principles of random noise analysis are being applied to the nystagmic response of vestibular origin and normal autocorrelation and related spectral density curves on the cat are obtained. Each animal serves as a normal control, as well as a test animal, and receives an isolated lesion within his vestibular system.
3675* 2/62-1/67 $55,947	Electrical Stimulation of the Vestibular Apparatus Dunstone, J.J., Dzendolet, E., Heuckeroth "Effect of some personality variables on electrical vestibular stimulation," **Percept Motor Skills** 18:689-95, 1964; Revusky, B.T.L., Moore, J.W., Dzendolet, E. "Conditioning of the human vestibular sway response," **Percept Motor Skills** 20: 593-600, 1965; Dzendolet, E., Moore, T.J. "Thresholds of schizophrenics to sinusoidal electrical vestibular stimulation," **Psychon Sci** 2:123-4, 1965	University of Mass., Amherst, Mass. 01003 Ernest Dzendolet, Ph.D.	To investigate human absolute thresholds to low-frequency sinusoidal electrical vestibular stimulation under various conditions.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
4155* 8/62-8/67 $570,880	A Study of Systems Involved in Hearing Krickstein, H.I., Gloor, F.J., Balogh, K. Jr., "Renal pathology in hereditary nephritis with nerve deafness," **Arch Path** 82:506-17, Dec 1966; Silverstein, H., Ishii, T., Balogh, K. Jr., "Metabolic activities of the endo-lymphatic sac," **Acta Oto-Laryngol** 62(1):61-73, 1966; Ishii, T., Balogh, K. Jr., "Acid phosphatase activity in the inner ear," **Acta Oto-Laryngologica** 62(3): 185-92, 1966	Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, Mass. 02114 Karoly Balogh, M.D.	To characterize the normal enzyme histochemical profile of the vestibular labyrinth and cochlea to serve as a basis for the study of human diseases and of experimental changes in animals.
4418 (Terminated 12/66) 1/63-12/66 $65,478	Electrical Responses of the Labyrinth and Its Centers Spiegel, E.A., Szekely, E.G., Moffet, R., Gildenberg, P., Lehman, R., Robbins, A. "Disturbances of the occipital lobe," **8th International Congress of Neurology,** Proc - Rapports - Berichte, Tom. III, Vienna, 5-10.IX:119-22, 1965; Escobedo, F. "Parietal ablations in cats with special reference to possible vestibular disturbances," **Confin Neurol** 26:511-18, 1965; Spiegel, E.A., Szekeley, E.G., Moffet, R., Gildenberg, P., Lehman, R., Robbins, A. "Cortical projections of the labyrinth," Internatl. Symposium on **Vestibular and Oculomotor Problems,** University of Tokyo, 9-14, Aug 1965	Temple University School of Medicine, 3400 N. Broad Street, Philadelphia, Pa. 19140 E. A. Spiegel, M.D.	In experimental studies on animals (cats, monkeys) it is attempted to ascertain the subcortical areas in the mesencephalon, diencephalon and proscencephalon as well as the cortical areas to which the labyrinth (non-acoustic part of the inner ear) projects.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
4620* 6/65-4/68 $141,601	Neural Basis and Diagnostic Value of Vestibular Reflexes Dolowitz, D.A. "Vertigo," **Laryngoscope** 75(5):805-19, May 1965; Dolowitz, D.A., Hiebert, T.G., Ord, R.J. "Nystagmus versus laterotorsion in dose duration drug studies," **Laryngoscope** 76(7): 1187-1200, July 1966; Dolowitz, D.A. "Testing vestibular spinal reflexes, Dizziness and Vertigo," 86-92, 1966	University of Utah, Salt Lake City, Utah 84112 David A. Dolowitz, M.D.	Five areas of research: patients with spatial disorientation; correlation for identification changes in specific balance disease; specific drug effects in health volunteers and in patients with specific diseases; rehabilitation of spatially disoriented patients to correlate with recording of reflexes during improvement; endolymphatic pressure changes in Meniere's disease by compressing guinea pig cochlear ducts and later doing histopathological study on temporal bones to confirm the postulated iatrogenic lesions.
5674* 1/65-12/67 $102,431	Experimental Studies on Vestibular Mechanisms	Vanderbilt University, Nashville, Tenn. 37203 Paul H. Ward, M.D.	To study effects of artificial tumor implants upon optokinetic and caloric induced nystagmus in cats by operating on groups of cats with preoperative baseline studies. Careful neurological and vestibular tests are performed at intervals during the month following surgery, and the pre- and postoperative tests results analyzed and correlated with histopathological findings.
6362 6/66-5/67 5/68** $21,227	Study of Vestibular Pathways in the Cerebellum	Wayne State University, 1400 Chrysler Expressway, Detroit, Mich. 48207 Leonard R. Proctor, M.D.	The research objective is to collect data on the function of vestibular pathways in the cerebellum and their significance for an understanding of the central vestibular connections which should eventually lead to improved clinical methods in diagnosis of vestibular disorders.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6563 9/66-8/67 8/71** $42,084	Evaluation of Some Central and Peripheral Vestibular Mechanisms	Washington University School of Medicine, 517 Euclid Avenue, St. Louis, Mo. 63110 Malcolm H. Stroud, M.D.	Investigating the validity of ideas formulated in a vestibular laboratory on the overall mechanisms and interactions of components of the vestibular system using controlled experiments and observations on: patients with known and unknown lesions, normal patients, and normals under circumstances such as intoxications and animals with induced lesions.
6785 9/66-8/67 8/70** $37,584	Central Mechanisms in the Vestibular Apparatus	The University of Iowa Iowa City, Iowa 52240 Brian F. McCabe, M.D.	Investigating neuronal mechanisms of the vestibular apparatus when they specifically apply to the physiology of central compensation from the loss of one vestibular end organ, and as central activity may be modified by vestibular-acting drugs.
6809 9/66-8/67 8/69** $71,544	Electron Microscope Studies on the Vestibular System Hinojosa, R., Robertson, J.D. "Ultrastructure of the 'spoon' type endings in the nucleus vestibularis tangentialis of the chick," (In Press)	University of Chicago, 950 E. 59th Street, Chicago, Ill. 60637 Raul Hinojosa	To determine the ultrastructure of the vestibular system within the central nervous system including the study of the characteristics of synapses in the vestibular nuclei of representative vertebrates, including man, and the synapses of secondary vestibular neurons with other structure such as nuclei of extraocular muscles, cerebellum and spinal cord.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6834* 9/66-8/67 $2,214	Laterotorsion or Cristospinal Reflexes Spector, M. (Editor) "Dizziness and vertigo-diagnosis and treatment," Published by Grune and Stratton, New York, 1967	Kensington Hospital, Mascher and Diamond Sts., Philadelphia, Pa. 19122 Martin Spector, M.D.	To confirm the value of additional tests of the cristospinal reflexes (laterotorsion) in a clinical environment and amplify previous findings of a wider variety of vestibular diseases; particularly positional vertigo and insufficiency of the vertebrobasilar system which have not been investigated specifically.
7007 1/67-12/67 12/69** $15,924	Vestibular and Auditory Function of the Sacculus Kohut, R.I., Lindsay, J.R. "Glomus jugulare tumors. New techniques for operability." **Laryngoscope** 75:750-62, May 1965; Fernandez, C., Kohut, R.I. "Lesions of the sacculus in the cat," Pending	University of Florida, Gainesville, Fla. 32601 Robert I. Kohut, M.D.	To evaluate the auditory function of the sacculus simultaneously with vestibular function; study of saccular function, its interrelation with the cochlea and vestibular apparatus, and the pecularities of saccular innervation. This work to form a part of an overall work concerned with the function and structure of the labyrinth.
7087 1/67-12/67 12/69** $32,597	Functional Organization of the Primate Vestibular Cortex Fredrickson, J.M., Schwarz, D., Kornhuber, H.H. "Convergence and interaction of vestibular and deep somatic afferents upon neurons in the vestibular nuclei of the cat," **Acta Otolaryng** 61:165, 1965; Fredrickson, J. M., Kornhuber, H.H., Figge, U., Scheidt, P. "Vestibular nerve projection to the cerebral cortex of the Rhesus monkey," To be submitted to **Exp Br Res**	Stanford University, Stanford, Calif. 94305 John M. Fredrickson, M.D.	To determine whether there are cortical neurons in primates which respond exclusively to vestibular input; whether there is convergence of other sensory afferents upon these neurons which do respond to vestibular stimulations and whether there are differences in discharge patterns for such multisensory units when compared to similar units in the brain stem; whether there is any correlation between responses of neurons studies and their cortical distribution.

NATIONAL INSTITUTE OF HEALTH EXTRAMURAL RESEARCH GRANTS ON DEAFNESS AND HEARING LOSS (Pages 166-193)

* - Project is completed ** - Extended commitment
Final reports are not yet available on these research projects

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
1310 4/57-3/68 3/69** $331,597	Psycho-Physical Study of Hearing Disorders Hodgson, W. R., Tillman, T. W. "Reliability of bone conduction occlusion effects in normals," **J of Aud Res** 6: 141-51, 1966; Hodgson, W.R., Bucy, P.C. "Evaluation of the auditory system following surgical section of the vestibular division of the eighth cranial nerve," **J Neurosurg** 598-602, Jun 1967; Carhart, R. T. "Labyrinthine otosclerosis," **Arch Otolaryng** 81:553, 1965; "Audiological manifestations of acute neural lesion cases with Meniere's disease," **J Speech Hearing Dis** 30:370, 1965	Northwestern University, 619 Clark Street, Evanston, Illinois 60201 Raymond T. Carhart, Ph.D.	Major purpose is the study of the deviations in auditory function which result from lesions in the peripheral auditory system, the central auditory system, and other portions of the central nervous system, with three aims: study of variations in psychophysical function with the view of contributing to understanding of basic auditory processes and the theory of hearing; improving techniques for diagnosis among pathologies and lesions within the auditory complex; and describing more fully the role of the central nervous system in the auditory system.
1829* 9/58-8/67 $422,424	Electrodermal Responses Associated With Hearing Bordley, J. E., Ruben, R. J., Lieberman, A. T. "Human cochlear potentials," **The Laryngoscope** 74(4):463 79, Apr 1964; Powers, B. M., Warfield, D., Ruben, R. J. "Development of the preyer response to different frequencies in normal CBA-J mice," **J Aud Res** 6:425-35, 1966	Johns Hopkins University, School of Medicine, 725 North Wolfe Street, Baltimore, Maryland 21205 John E. Bordley, M.D.	Studying discrimination in cats with profound hearing losses by using word patterns that may be discriminated by cats suffering high tone loss of varying degrees using human and synthetic speech, and to continue the study of auditory sensitivity of CBA-J mice measured by behavioral responses, galvanic skin resistance studies, cochlear potential sensitivity studies, and single unit measurements.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
1832 9/58-8/67 8/68** $206,485	Correlation of Inner Ear Pathology and Function	New York University Medical Center, 550 First Avenue, New York, New York 10016 John F. Daly, M.D.	Two departures from the routine preparation of temporal bones to be made: use of rapid decalcification techniques; preparing whole cochleas by skeletonizing and thinning of the osseous cochlea wall, and studying the specimens under light and phase microscopy.
2035* 4/59-8/67 $107,792	Masking Efficiency in Normal and Impaired Ears Harbert, F., Young, I. M., "Spread of masking in ears showing abnormal adaptation and conductive deafness," **Acta Otolaryng** 60:49-58, 1965; Harbert, F., Young, I. M., Menduke, H. "Audiologic findings in presbycusis," **J Aud Res** 6:297-312, 1966; Harbert, F., Young, I. M. "Audiologic findings in Ramsay-Hunt syndrome," **Arch Otolaryng** 85:76-83, Jun 1967	Jefferson Medical College, 1025 Walnut Street, Philadelphia, Pennsylvania 19107 Fred Harbert, M.D., D.Sc.	Study of masking and temporary threshold shift in impaired ears by collection of statistical data and by clinical studies.
2167* 9/59-8/67 $173,999	Correlations of Electrophysiological, Behavioral, and Structural Measures of Hearing Dewson, J. H., III, Dement, W. C., Simmons, F. B. "Middle ear muscle activity in cats during sleep," **Exp Neurol** 12(1):1-8, May 1965; Simmons, F. B. "Binaural summation of the acoustic reflex," **J Acoust Soc Am** 37(5):834-6, May 1965	Stanford University, 300 Pasteur Drive, Stanford, California 94305 F. Blair Simmons, M.D.	To study relations between hearing, biophysiological electrical potentials, and selected tissue damages to the cochlea and auditory nerve. Collection of additional related information on some physical characteristics of electrodes within tissue, impedance over long periods of time, sensitivity for biopotential measurements related to tip diameter and distance from the biological transducer.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
2182 9/59-11/67 11/69** $215,567	A Histopathologic Study of Human Temporal Bones Nager, G. T. "Sensorineural deafness and otosclerosis," **Ann Otol** 75(2): 481-511, 1966; Nager, G. T. "Meningiomas involving the temporal bone: Clinical and Pathological aspects," Irish J Med Sci (Sixth Ser. No. 483) p. 69, Mar 1966; Nager, G. T. "Sensorineural deafness and otosclerosis," **Trans Am Otol Soc 53:1966**	Johns Hopkins University, 725 N. Wolfe Street, Baltimore, Maryland 21205 George T. Nager, M.D.	A histologic study of human temporal bones, in an attempt to correlate structural and pathological changes with functional disorders of the cochlear and vestibular apparatus.
2186* 9/59-8/67 $83,899	Experimental Studies of New Fenestration Techniques Allen, G. W., Habibi, M. "The effect of increasing the cerebrospinal fluid pressure upon the cochlear microphonics," **The Laryngoscope** 72(4):423-34, Apr 1962; Allen, G. W., Dallos, P. J., Kuruvilla, T. K. "Experimental stapedectomy in cats," **Annals of Otology, Rhinology and Laryngology** 73(3):695, Sep 1964; Feldman, R. M., Allen, G. W. "Effects of cerebrospinal fluid pressure on the cat coclea," **Arch Otolaryng** 84:422-5, Oct 1966	Northwestern University Medical School, 303 E. Chicago Avenue, Chicago, Illinois 60611 George W. Allen, M.D.	Histological work in a temporal bone laboratory with four sources of specimens: human temporal bones from the National Temporal Bone Banks Program, human temporal bones collected in their institution, surgical specimens removed at ear operations, and animal specimens from other projects within their department.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
2482 6/60-2/68 2/70** $113,800	Neural Mechanisms in Acoustic Perception Desmedt, J. E., Delwaide, P. J. "Particularites fonctionnelles de l'inhibition efferente cochleaire chez le pigeon," (Fr) **Arch Int Physiol** 72(fasc.2):341-6, 1964; Desmedt, J.E., La Grutta, G., La Grutta, V. "Auditory response characteristics modified by efferent olivo-cochlear bundle (OCB) inhibition," **Federation Proceedings** 22:677, 1963; Desmedt, J. E, Delwaide, P. "Activation of the efferent cochlear bundle in the pigeon," **J Acoust Soc Amer** 35(5):809, 1963	University of Brussels 50, Avenue F. D. Roosevelt, Brussels 5, Belgium John E. Desmedt, M.D.	A multi-disciplinary approach to the many challenges provided by the structure mode of operation and psychological significance of the centrifugal auditory system, and to extend the data thus collected to design tests for identification of neurological lesions in patients presenting disorders of auditory communication. The experimental research will be extended to the primate which has an auditory organization more similar to that of man.
2484* 12/59-11/67 $362,947	Measurement of Hearing in Animals by Operant Methods Gourevitch, G., Cole, B. "A Manipulandum for use with rats responding to auditory stimuli." **J Exp Anal Behav** 6(3):413-4, Jul 1963; Hack, M.H. "Receiver operating characteristics in the rat," **J Aud Res** 6:229-34, 1966; Gourevitch, G. "Auditory masking in the rat," **J Acoust Soc Amer** 37(3): 439-43, Mar 1965	New York University Medical Center, 550 First Avenue, New York, New York 10016 John F. Daly, M.D.	To provide information on the interaction of motivational and sensory variables in animal psychophysics (rats will be used). A series of investigations will be undertaken to explore the effect of brain stem lesions on the auditory function of the cat also.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
2503 12/59-11/67 11/68** $159,349	The Use of Sensory Information by Non-Verbal Children Rapin, I., Schimmel, H., Tourk, L. M., Krasnegor, N. A., Pollak, B.S. "Evoked responses to clicks and tones of varying intensity in waking adults, **Electroenceph Clin Neurophysiol** 21: 335-44, 1966; Rapin, I., Tourk, L. M., Costa, L. D. "Evaluation of the Purdue Pegboard as a screening test for brain damage," **Develop Med Child Neurol** 8(1):45-54, Feb 1966; Rapin, I., Costa, L. D., Mandel, I. J., Fromowitz, A. J. "Keytapping and delayed feedback," **J Speech Hearing Res** 9 (2):278-88, June 1966	Albert Einstein College of Medicine of Yeshiva University 110 West 57th Street, New York, New York 10461 Isabelle Rapin, M.D.	Their goal is to develop valid tests for establishing auditory threshold in infants and young children, to differentiate the part played by hearing loss in brain-damaged children who do not develop speech, and investigating the differences between them and those children who are not brain damaged. They have found that auditory evoked responses to attentuated tones recorded in normal, brain-damaged and deaf infants during spontaneous sleep or after sedation with chlorpromazine gave a valid estimate of the sensitivity of the ear and peripheral auditory pathway.
2779 10/62-9/67 9/70** $289,160	VIIIth Nerve Dysfunction in Neurological Disorders Milojevic, B. "Simultaneous stimulation of the otolith organs and semicircular canals," **Acta Otolaryng** 6, 1966; Milojevic, B., St. Laurent, J. "Cortical vestibular projection in the cat," **Aerospace Med** 37(7):709-12, Jul 1966; Milojevic, B. "Electronystagmographical study of vertigo," **Otorhino-laryng** 29:85-94, 1967	University of Iowa, Iowa City, Iowa 52240 Bosko Milojevic, M.D.	To investigate the threshold of hearing for random noise, problem of the "dizzy patient", role and scope of neuro-otology, relation of vertigo and EEG, unilateral functional hearing loss, Bekesy audiometer technique for animal research, effect of stapes surgery on vestibular function, comparative anatomy of temporal bone in higher animals, and effect of centrifugation on otoliths of turtle, tadpole, and frog.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
2838 9/60-8/67 8/68** $99,829	Human Temporal Bone Pathology Benitex, J. T., Schuknecht, H.F., Brandenburg, J. H. (Capt.) "Pathologic changes in human ear after kanamycin," **Arch Otolaryng** 75:18-23, Mar 1962; Elliott, D. N., McGee, T. M. "Effect of cochlear lesions upon audiograms and intensity discrimination in cats," **Annals of Otology, Rhinology, and Laryngology** 74(2):386, Jun 1965	Henry Ford Hospital 2799 West Grand Blvd., Detroit, Michigan 48202 Royal C. Hayden, Jr., M.D.	To collect and study human temporal bones removed at autopsy with histological preparations made on only those specimens on which there had been auditory and vestibular tests. The correlation of cochlear and vestibular histopathology with functional changes should provide an improved basis for medical and surgical diagnosis and management of ear disorders.
2974 9/61-1/68 1/72** $509,156	Psychophysics and Hearing Von Bekesy, G. "Pressure and shearing forces as stimuli of labyrinthine epithelium." **Arch Otolaryng** 84:122-30, Aug 1966; Stevens, S. S., Greenbaum, H. B. "Regression effect in psychophysical judgement," **Perception and Psychophysics** 1:439-46, 1966; Stevens, S. S. "Matching functions between loudness and ten other continua," **Perception and Psychophysics** 1:5-8, 1966	Harvard University, Cambridge, Massachusetts 02138 S. S. Stevens, Ph.D.	To investigate the effect of a masking noise on the form of the loudness function, the development of techniques for measuring more precisely the form of the loudness function in a normal or abnormal ear, and the need for definitive information to validate the procedures for calculating both loudness and noisiness.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
3032 1/61-12/67 12/71** $143,375	Frequency Resolution in Normal and Impaired Hearing Bilger, R. C., Sheeley, E. C. "Temporal integration as a function of frequency," **J Acoust Soc Amer** 36 (10):1850-7, Oct 1964; Bilger, R. C. "Remote masking in the absence of intra-aural muscles," **J Acoust Soc Amer** 39(1):103-8, Jan 1966	University of Pittsburgh, Pittsburgh, Pennsylvania 15213 Robert C. Bilger, Ph.D.	To try out an improved, or at least simplified, method for determination of frequency discrimination in human subjects with normal and pathological hearing.
3039* 1/61-12/67 $129,999	Automatic Tracking for Quantitation of Recruitment Progress report only: Automatic tracking for quantitation of recruitment. Period covered: Jan 1, 1961 to Apr 15, 1964	Mount Sinai Hospital, 100th Street and Fifth Avenue, New York, New York 10029 Francis Miskolczy-Fodor, M.D.	To establish theoretical and technical principles for loudness and recruitment testing, to solve problematic cases and basic theoretical information of various lesions of the inner ear.
3388* 5/62-4/67 $226,614	Self-administered Procedures in Speech and Hearing Black, J. W. "Acoustic confusion in immediate memory," **Brit J Psychol** 55:75, 1964; "Appropriate materials for self-administered training in intelligibility," **J Speech Hearing Dis** 29:70, 1964	Ohio State University Research Foundation, 1314 Kinnear Road, Columbus, Ohio 43212 John W. Black	Providing motivation for individuals to improve their defective speech, and developing programs of testing and training materials that will enable the experimental subject to achieve his goals. Objectives are to improve intelligibility, modifications of vocal rate, intonation, stress, sound pressure level, and pronunciation. Modified procedures will be used on those with sensory deficits in hearing.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
3648* 10/61-9/67 $119,370	Effect on Hearing of Tropical and Nutritional Diseases Kapur, Y. P. "Otosclerosis in South India," **Acta Otolaryng**, April 1966; "Hearing in Indian Children," **Indian J Med Res**, Aug 1966; "Hearing and Infectious, Tropical and Nurtritional Diseases," **Laryngscope**, Mar 1966	Christian Medical College and Hospital, P.O. Box 3, Vellore-1, S. India Yash Pal Kapur, M.D.	Obtaining information concerning hearing loss in 1,000 children (ages 5-15), and hospital patients with infectious, tropical, and nutritional diseases; histopathological studies of temporal bones and brains removed at autopsy to correlate with otological findings and hearing studies. A training program for audiometric technicians established and materials were developed for use in speech audiometry in the Tamil language.
3649* 10/61-9/67 $86,455	Effect on Hearing of Tropical and Nutritional Diseases Bordley, J. E. "Hearing and Infectious, Tropical and Nutritional Diseases," **Laryngscope**, March 1966	The Johns Hopkins University, 725 N. Wolfe Street, Baltimore, Maryland 21205 John E. Bordley, M.D.	Study of the effect on hearing of a variety of infectious, tropical and nutritional diseases by following a pool of 1,000 children with normal hearing from ages 5 to 10 until age 15. Collaborative study between the Vellore Christian Medical College in India and the Johns Hopkins University School of Medicine.
3782* 1/62-12/67 $153,743	Histopathology of Temporal Bones Rutledge, L. J., Lewis, M. L., Sanabria, F. "Fatal Meningitis Related to Stapes Operation," **Arch Otolaryng** 78:637-41, 1963; Rutledge, L. J., Sanabria, F., Tabb, H. G., Igarashi, M. "Experimental Fat Grafts and Teflon Pistons in Cats," **Arch Otolaryng** 81: 570-6, 1965	Tulane University, 1430 Tulane Avenue, New Orleans, Louisiana 70112 Lewis J. Rutledge, M.D.	Using temporal bones collected at autopsy from term and premature infants to establish a long-term, correlative study to evaluate pathological changes in the inner and middle ear associated with auditory and vestibular disorders for therapy and prevention of deafness.

Grant Number Starting Date and Duration Cost	**Project Title and Selected Publications**	**Sponsoring Institution and Project Director**	**Description of Research**
3855 9/62-8/67 8/69** $218,277	Surgical Anatomy of the Ear and Temporal Bone Anson, B. J., Donaldson, J. A. "Development and Adult Anatomy of the Ear and Temporal Bone 1966 Instruction Section Course 403," **Amer Acad of Ophthalmology and Otolaryngology**; Anson, B. J., Winch, T. R., Warpeha, R. L., Donaldson, J. A. "The Blood Supply of the Otic Capsule of the Human ear," **Annals Otology, Rhinology, Laryngology** 75(4):1-24, Dec 1966	State University of Iowa, Iowa City, Iowa 52240 Barry J. Anson, Ph.D.	To investigate the structure of the ear and temporal bone being concerned with normal and pathological anatomy (both developmental and adult) in relation to problems which arise in the practice of otology.
3932 4/62-3/68 3/74** $261,291	Electron Microscopy of the Inner Ear Schuknecht, H. "Early post-mortem changes in the organ of corti (guinea pig)," **Z. Zellforsch** 65:220, 1965; Schuknecht, H. "Secretory epithelial lining in the ampullae of the guinea pig labyrinth," **Acta Otolaryng** 57: 514, 1964; Lim, D. J., Paparella, M. M., Kimura, R. S. "Ultrastructure of the eustachian tube and middle ear mucosa in the guinea pig," **Acta Otolaryng** 63:425-44, 1967	Massachusetts Eye and Ear Infirm., 243 Charles Street, Boston, Massachusetts 02114 Robert S. Kimura	To conduct detailed inquiries into the normal fine morphology and morphological changes underlying various types of deafness in the inner ears of both animal and man; perform a detailed study to correlate resulting ultrastructural and functional alterations; devise a method to reduce the hydrops in the inner ear of the animal; continue studying specimens taken from the patients of Meniere's disease and also of presbycusis.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
3953 9/62-11/67 11/68** $127,006	Temporal Bone Pathology of Humans and Research Animals Benitez, J. T., Corvera, J., Novoa, V. "Auditory manifestations of cochlear and retrocochlear lesions," **Ann Otol** 75:149, Mar 1966; Benitez, J. T. "Bilateral acoustic neuroma auditory manifestations and pathology," **Proc Int Congr Audiol**, Mexico, Nov 1966; "Diabetes mellitus: Effect upon the organ of hearing and its central pathways," **Proc Pan Am Assn Otolaryng Congr**, Mexico, Nov. 1966; Martins, H., Benitez, J. T. "Multiple neurofibromatosis involving the VIIIth nerve," **J Laryng Otol** 81:354-57, 1967	Wayne State University, School of Medicine, 1400 Chrysler Expressway, Detroit, Michigan 48207 Jaime T. Benitez, M.D.	To collect and study human temporal bones removed at autopsy, and to study the histopathological changes in temporal bones from experimental animals.
3995 9/62-8/67 8/70** $174,008	Electron Microscopy of the Inner Ear Hilding, D. A., House, W. F. "Acoustic Neuroma: Comparison of traumatic and neoplastic," **J Ultrastruct Res** 12:611-23, 1965; Hilding, D. A. "Cochlear chromaffin cells," **Laryngoscope** 75:1, 1965; Kikuchi, K., Hilding, D. A. "The spiral vessel and stria vascularis in Shaker-1 mice," **Acta Otolaryng** 63:395-410, 1967; Hilding, D. A., Hilding, A. C. "Ultrastructure of tracheal cilia and cells during regeneration," **Ann Otol** 75(2):281-94, Jun 1966	Yale University, 333 Cedar Street, New Haven, Conn. 06520 David A. Hilding, M.D.	Study of histochemistry of the inner ear sensory epithelium and secretory area, the pathology of congenital and acquired inner ear disease, electron microscopy in normal inner ears and those surgically removed for Meniere's Disease and acoustic neuroma, and cellular reaction to trauma and fixation.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
4029* 3/62-12/66 (Terminated) $12,746	Support of Senior Fellowship	Montana State University, Missoula, Montana Charles D. Parker, Ph.D.	Evaluation of the effectiveness of the manual language (sign and finger spelling) of the adult deaf by utilizing a technique to measure this ability to construct and transmit a message about a specified event as compared to a control group of normal hearing individuals, and planning to measure the ability of the visually oriented adult deaf to use nonverbal facial and/or body cues in oral conversation.
4046* 11/62-10/67 $[illegible]76,176	Audiological Tests and Experimental Deafness McCabe, P. A., Dey, F. L. "The effect of aspirin upon auditory sensitivity," **Annals of Otology, Rhinology and Laryngology** 74 (2):312, Jun 1965	The C. W. Shilling Auditory Research Center, Inc., 348 Long Hill Road, Groton, Connecticut 06340 Frederick L. Dey, Ph.D.	To determine the audiological picture of ears partially deafened by "pure" types of disorder—end-organ, auditory nerve, or central nervous system—in humans and monkeys.
4084* 9/62-8/67 $196,094	Effect of Sensorineural Lesions on Audition Elliott, D. N. "Review of Auditory research," **Ann Rev Psychol** 15:57-86, 1964; Fujita, S., Elliott, D. N. "Thresholds of audition for three species of monkey," **J Acoustical Soc Amer** 37 (1):139-44, Jan 1965	Henry Ford Hospital, 2799 W. Grand Blvd., Detroit, Michigan 48202 Donald N. Elliott, Ph.D.	To determine by behavioral testing with monkeys, the effect of sensorineural lesions in the auditory system upon auditory discrimination.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
4099* 8/62-12/67 $58,706	Neurophysiologic Studies of the Auditory System Rosenberg, J. J., Alford, B. R. "experimentally controlled facial nerve injuries," **Arch Otolaryng** 34:119-24, Sept. 1966; Alford, B. R. "Human tolerance to low frequency sound," **Trans Am Acad Ophthal Otolaryng** 70:40, 1966; Alford, B. R. "Effects of very low frequency tones on auditory thresholds," **J Speech Hearing Res** 9:150, Mar 1966	Baylor University, College of Medicine, 1200 Moursund Avenue, Houston, Texas 77025 Bobby Ray Alford, M.D.	Neurophysiologic studies of the auditory system with emphasis on the peripheral mechanisms; study of artificial cochlear substitution; determination of time and site of DNA synthesis within the cochlea.
4308 12/62-2/67 (Terminated) $71,108	Measurement of Speech-Sound Discrimination Loss Kopra, L.L., Strickland, L.E. "Hearing threshold levels of non-job-noise-exposed air force personnel," **School of Aviation Medicine**, USAF, Report No. 61-117, 1961, 12 pp; Kopra, L. L., Strickland, L. E. "Noise exposure of B-52 and KC-135 aircraft maintenance personnel," **School of Aerospace Medicine**, USAF, Report No. 61-117, 1961, 17 pp.	The University of Texas, Austin, Texas 78712 Lennart L. Kopra, Ph.D.	To increase knowledge of the diagnostic-therapeutic implications of audiologic test findings, particularly speech discrimination test results. To investigate the relationship between PB-50 word discrimination test results and the Fairbanks Rhyme Test results on normal and pathological ears.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
4403* 12/62-11/67 $88,810	The Determination of Susceptibility to Hearing Loss Ward, W. D. "The concept of susceptibility to hearing loss," **J Occup Med** 7(12):595-607, Dec 1965; Ward, W.D. "Temporary threshold shift in males and females," **J Acoust Soc Amer** 40(2):478-85, Aug 1966; Ward, W. D. "Proposed Damage-risk criteria for intermittent noise exposure," **International Congress on Occupational Health, Vienna**, Sept 19-24, 1966; Ward, W. D. "The use of TTS in the derivation of damage risk criteria for noise exposure," **Int Audiol** 5(3):309-13, Sept 1966	University of Minnesota, Minneapolis, Minn. 55414 W. Dixon Ward, Ph.D.	To study, in humans, the interrelations among certain measurable aspects of hearing that are thought to be positively correlated with susceptibility to permanent hearing loss caused by exposure to noise; to select and administer to lower animals tests to measure permanent hearing loss resulting from exposure to noise, and on the basis of these correlations to select the tests most likely to prove successful in predicting which individuals (in man) will suffer greater hearing losses from a given noise exposure.
4746* 9/63-8/68 $161,110	Auditory Discrimination Test Procedures Elliott, D. N., Riach, W. D., Sheposh, J. P., Trahiotis, C. "Discrimination performance of high school sophomores on a battery of auditory tests," **Acta Otolaryngologica Supplementum 216**, Uppsala, 1966; Elliott, D. N. "Progress Report (Sep 1, 1963-Jul 31, 1965)," prepared Aug 15, 1965	Wayne State University, Detroit, Mich. 48202 Donald N. Elliott, Ph.D.	To develop reliable auditory discrimination testing procedures for the ultimate determination of the usefulness of the various tests as diagnostic tools in the differentiation of abnormal from normal hearing; the extent to which variations in one type of discrimination ability are related to other types; and the extent to which improvement in discrimination ability is possible through practice.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
4799* 4/64-3/68 $110,339	Diagnostic Aspects of Electroencephalic Audiometry Goldstein, R., Price, L. L. "Clinical Use of EEA with an average response computer: A case report," **J Speech and Hearing Dis** 31(1):75-8, Feb 1966; Price, L. L., Goldstein, R. "Averaged evoked responses for measuring auditory sensitivity in children," **J Speech and Hearing Dis** 31 (3): 248-56, Aug 1966; Shepherd, D. C., Goldstein, R. "Relation of Bekesy tracings to personality and electrophysiologic measures," **J Speech and Hearing Res** 9(3):385-411, Sep 1966; Price, L. L. , Rosenblut, B., Goldstein, R., Shepherd, D. C. "The averaged evoked response to auditory stimulation," **J Speech and Hearing Res** 9(3): 361-70, Sep 1966	The Jewish Hospital of St. Louis, 216 S. Kingshighway Blvd., St. Louis, Mo. 63110 Robert Goldstein, Ph.D.	The development of an objective procedure for determination of threshold hearing level by means of electroencephalic audiometry in young children with disorders of communication.
4817* 9/63-8/67 $79,613	Acoustic Measurements on Pathological Ears Feldman, A. S., Zwislocki, J. "Effect of the acoustic reflex on the impedance at the eardrum," **J Speech and Hearing Res** 8(3):213-22, Sep 1965; Verrillo, R. T. "Vibrotactile threshold and pulse polarity," **Psychon Sci** 3:171, 1965	Syracuse University Research Institute, Building D-6, Collondale Campus, Syracuse, New York 13210 Jozef J. Zwislocki, DSC	Investigation of usefulness of acoustic impedance measurements at the eardrum for diagnostic, prognostic, and research purposes using an instrument based on principle of acoustic bridge; static impedance with impedance changes due to acoustic muscle reflex; and the acoustic symptomatology of various auditory pathologies; evaluation of stapedial prostheses.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5044 1/64-12/67 8/68** $119,170	Audiologic Correlates of Central Auditory Disorders Speaks, C., Jerger, J. "Method of measurement of speech identification," **J Speech Hearing Res** 8(2): 185-94, Jun 1965; Jerger, J., Jerger, S. "Critical off-time in VIIIth nerve disorders," **J Speech Hearing Res** 9(4):573-83, Dec 1966	Houston Speech and Hearing Center, Texas Medical Center, 1343 Moursund Ave., Houston, Texas 77025 James Jerger, Ph.D.	The analytic exploration and definition of the manner in which responses to auditory stimuli are modified by lesions in the VIIIth nerve and auditory pathways within the central nervous system of humans; the utilization of this information in the design of auditory tests for the purpose of assisting in the differential diagnosis of auditory disorders in humans.
5082* 9/64-8/67 $67,202	An Investigation of Auditory Adaptation Harbert, F., Weiss, B. G., Wilpizeski, C. R. "Some effects of stimulus parameters on the measurement of suprathreshold auditory adaptation." **J Aud Res** 6:409-18, 1966; Gold, A., Wilpizeski, C. R. "Studies in auditory adaptation: II Some effects of sodium salicylate on evoked auditory potentials in cats," **Laryngoscope** 76(4): 674-85, Apr 1966; Harbert, F., Young, I. M. "Amplitude of Bekesy tracings with different attenuation rates," **J Acoust Soc Amer** 39(5)Part 1:914-9, May 1966	Jefferson Medical College, 11th and Walnut Streets, Philadelphia, Pa. 19107 Fred Harbert, M.D.	To investigate suprathreshold adaptation and threshold drift in human observers and electrophysiological responses from the auditory system of cats and guinea pigs. Attempts made to discover similarities and differences between psychophysical adaptation and electrophysiological equilibration.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5083 1/64-12/67 12/68** $103,268	Influence of Tympanic Muscle Integrity on TTS and PTS Fujita, S., Elliot, D. N. "Thresholds of audition for three species of monkey," J Acoust Soc Amer 37(1):139-44, Jan 1965; Hayden, R. C., Jr., Igarashi, M. "Damaged oral window fat grafts," In preparation, 6/63	Henry Ford Hospital, 2799 West Grand Blvd., Detroit, Mich. 48202 Royal C. Hayden, Jr., M.D.	To evaluate the effects of severing the middle ear muscles, separately and together, on stimulation induced temporary and permanent threshold shifts by comparing the relations between audiograms obtained before and after cutting the middle ear muscles on exposure to high intensity sound as well as the recovery from temporary and permanent hearing impairment.
5180 6/64-5/68 5/70** $35,943	Histopathology of the Temporal Bone Suga, F., Snow, J. B. "Effects of direct current on cochlear microphonics in normal and pathologic conditions," (Submitted for publication)	University of Oklahoma Medical Center, 800 Northeast Thirteenth Street, Oklahoma City, Okla. 73104 James B. Snow, Jr., M.D.	To acquire new information on the correlation of the micropathology of the inner ear with otologic and audiologic findings in individuals with sensorineural hearing loss from temporal bones removed from patients at autopsy.
5291 9/64-8/66 (Terminated) $49,514	Applications of Learning Characteristics: The Deaf	University of Georgia, Athens, Ga. 30601 Kathryn A. Blake, Ph.D.	To investigate the effects and interaction effects of selected task and subject variables on deaf individuals' responses to situations involving learning and retention and to use the data thus obtained in proposing new procedures for increasing the efficiency of deaf individuals' communicative processes.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5308* 4/64-3/68 $53,652	Ultrasonic Overstimulation of the Guinea Pig Ear Peterson, E., Vernon, J. "Hearing in the vampire bat, **Demodus rotundus murinus**, as shown by cochlear potentials," **J Aud Res** 6:181-7, 1966; "Echolocation signals in the freetailed bat, **Tadarida mexicana**, " **J Aud Res** 5:317-30, 1965; Peterson, E. A., Pate, W. E., Wruble, S. D. "Cochlear potentials in the dog: I. Differences with variations in externalear structure," **J Aud Res** 6:1-11, 1966	University of Miami, Coral Gables, Florida Ernest A. Peterson, Ph.D.	Investigating the patterns of damage in the guinea pig ear which arise from overstimulation with tones ranging from 20 Kc to 100 Kc. Possible histologic and functional changes resulting from this ultrasonic overstimulation will be evaluated in an effort to infer the patterns of action which occur along the basilar membrane at these frequencies.
5369 4/64-12/66 (Terminated) $106,056	Temporal Bone Pathology–Human and Experimental Gussen, R., Donahue, D. "Decalcification of temporal bones with tetrasodium edetate," **Arch Otolaryng** 82: 110-4, Aug 1965; Donahue, D., Gussen, R. "Rapid parlodion embedding of temporal bones," **Arch Otolaryng** 83:28, Jan 1966	Otologic Laboratory Inst. for Medical Research, Cedars of Lebanon Hospital, 4751 Fountain Avenue, Los Angeles, Calif. 90029 Victor Goodhill, M.D.	A temporal bone bank established for the collection and processing of human temporal bones to study a variety of pathological conditions as well as to clarify several basic morphologic problems in the normal ear. Temporal bones of cats, rats, guinea pigs, and bats are being studied by autoradiography to determine postnatal growth in newborn animals.
5464 11/64-10/67 10/68** $103,456	Perception of Complex Auditory Stimuli by the Deaf	Hearing and Speech Center, Gallaudet College, Washington, D.C. 20002 James M. Pickett, Ph.D.	To investigate the abilities of deaf (and other persons with impaired hearing), to perceive complex auditory stimuli using discrimination and identification tests of sound stimuli for developing psychoacoustic information on the perceptual effects of neuro-sensory pathologies of audition.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5491* 9/64-8/67 $41,614	The Anatomy and Pathology of the Human Temporal Bone Ritter, F. N., Lawrence, M. "A histological and experimental study of cochlear aqueduct patency in the adult human," **Laryngoscope** 75:1224-33, 1965	University of Michigan, Ann Arbor, Mich. 48104 Frank N. Ritter, M.D.	Microdissection of autopsied normal and abnormal human temporal bones; staining methods and examination by phase-contrast illumination for cochlear cytoarchitecture, histopathology for correlating with hearing impairment for better understanding of normal cochlear anatomy in resolving the nature of sensorineural hearing losses and their audiologic diagnosis.
5551 9/64-12/67 12/68** $65,971	Histochemistry of the Inner Ear Following Cryosurgery Wolfson, R. J., Cutt, R. A., Ishiyama, E., Myers, D. "Cryosurgery of the labyrinth," Preliminary report of a new surgical procedure. To be published in **Laryngoscope**, May 1966; Cutt, R. A., Wolfson, R. J., Ishiyama, E., Myers, D. "Preliminary results with experimental cryosurgery of the labyrinth," **Arch Otolaryng** 82:147-58, Aug 1965; Rothwarf, R., Cutt, R. A., Wolfson, R. J. "A versatile low-temperature probe for application to cryosurgery," **Advanced Cryogenic Engineering** 10:393-7, Plenum Press, 1965	Presbyterian-University of Pennsylvania Medical Center, 51 N. 39th Street, Philadelphia, Pa. 19104 Eiichi Ishiyama, M.D.	Cooling of vestibular portion of inner ear to study the morphology and chemistry of guinea pig cochlear hair cells exposed to white noise for an explanation of temporary noise trauma by using histochemical techniques to study changes in distribution of enzymes of the citric acid cycle following cryosurgery and correlation of these energy changes in vestibular and cochlear function.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5605* 8/64-8/67 $102,242	Psychoacoustic Studies in Pathologic Hearing Thalmann, R. "Cross-modality matching in the study of abnormal loudness functions," The Laryngoscope 75 (11): 1708-26, Nov 1965; O'Connell, Ed, Holtzscher, G. S., Thalmann, R. "A simple system of remote control and read-out for audiological measurements," The Laryngoscope 76(10):1694-7, Oct 1966	Washington University School of Medicine, 517 S. Euclid Ave., St. Louis, Mo. 63110 Ruediger Thalmann, M.D.	To study three major aspects of the hearing process in pathological conditions: loudness (the application of various loudness scaling procedures to the study of abnormal loudness function); adaptation, fatigue, masking (various types are determined and compared with each other); and speech discrimination (various types of pathologic hearing).
5623* 1/65-12/67 $34,372	The Central Projection of Vestibular Endorgans	Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, Mass. 02114 Richard R. Gacek, M.D.	Basic research on the vestibular endorgans of the cat by axonal degeneration techniques following lesions in the vestibular ganglion and using staining techniques to understand vestibular mechanisms in neuroanatomical and neurophysiological studies to help in clinical evaluation and diagnosis of vestibular problems.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5690* 6/65-5/68 $58,677	Temporal Bone Histopathological Research Laboratory Honrubia, V., Robbins, R.G., Bauknight, R. S. "Anatomical distribution of efferent fibers in the VIIIth cranial nerve of the bullfrog (rana catesbeiana)," received March 1967; Ward, P. H., Honrubia, V., Moore, W. S. "Inner ear pathology in deafness due to maternal rubella," received March 1967	Vanderbilt University, School of Medicine, Nashville, Tenn. 37203 Paul H. Ward, M.D.	The primary objective is the acquisition and histopathological study of the temporal bones and brains of deceased humans who had documented case histories of auditory and vestibular disturbances to correlate the premortem data with the postmortem pathological findings. This laboratory is also processing and sectioning the temporal bones for animal work in experimental cochlear and vestibular neurophysiology and for histochemical experiments.
5754* 5/65-4/68 $64,962	Neurologic Correlates of Auditory Perception	Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, Mass. 02114 Alfred D. Weiss, M.D.	A study of auditory perception to define central hearing processes will be undertaken on a normative population on a longitudinal and cross-sectional age basis, and on patients with lesions of the inner ear, auditory nerve, and central nervous system.
5816* 6/65-5/67 $52,052	Human Temporal Bone Pathology	The Ohio State University Research Foundation, 1314 Kinnear Road, Columbus, Ohio 43212 William H. Saunders, M.D.	Evaluation of methods of bone fixation and histopathological changes of temporal bones from patients with deafness, tinnitus, dizziness to relate with auditory function and other tests acquired prior to death.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5861* 5/65-12/67 $12,783	Language Learning by the Soviet Preschool Deaf Morkovin, B. V. "Language in general development of the preschool deaf child," Presented at the 1966 American Speech and Hearing Association Convention in Washington, D. C.	Boris V. Morkovin, Ph.D. (Individual Investigator) 881 South Bronson Avenue, Los Angeles, Calif. 90005	Education of the deaf to find more effective ways of teaching language communication to very young deaf children. Book to be published on Soviet differential diagnosis of the language disorders of handicapped children. Will be based upon Russian theory and research with information on organization, medical, psychological, and basic research aspects.
5881 9/65-8/67 8/70** $43,648	Otopathology by Light Microscopy Schuknecht, H. F. "Deafness in congenital syphilis," **Arch Otol** 83:44, Jan 1966; Kos, A. O., Schuknecht, H. F., Singer, J. D. "Temporal bone studies in 13-15 and 18 trisomy syndromes," **Arch Otolaryng** 83:57-63, May 1966	Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, Mass. 02114 Harold F. Schuknecht, M.D.	To acquire information on the inner ear pathology of patients suffering from auditory and vestibular disorders. History, examination, auditory and vestibular tests done on patients admitted for temporal care; terminal bones studied on autopsy where possible.
5898 9/66-8/67 8/69** $30,061	Vestibular Dysfunction in Otosclerosis Hart, C. W. "Vestibular paralysis of sudden onset and probably viral etiology," **Annals of Otology, Rhinology, and Laryngology** 74(1):33-47, Mar 1965	Northwestern University, Medical School, 303 E. Chicago Ave., Chicago, Illinois 60611 Cecil W. Hart, M.D.	To determine whether or not the otosclerotic process which is known to produce hearing loss may be responsible for vestibular disease; to study patients in whom a diagnosis of pure sensorineural loss secondary to otosclerosis has tentatively been made to determine whether vestibular testing may aid in the clinical diagnosis of this condition.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6082 9/65-8/66 (Terminated) $13,212	Salicylate Ototoxicity Myers, E. N., Bernstein, J. M. "Salicylate ototoxicity, clinical and animal studies," (Manuscript submitted for publication); Silverstein, H., Bernstein, J. M. "Concentration of penicillin and oxytetracycline in purulent and serous otitis media," (Manuscript in preparation)	Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, Mass. 02114 Joel M. Bernstein, M.D.	To investigate the cause of the reversible hearing loss associated with acute and chronic salicylate intoxication; to investigate the effect of acute salicylate intoxication on the biophysical properties and histochemical properties of the cochlea and the effect of this drug on the vestibular system.
6093* 2/66-1/68 $27,806	The Histochemistry and Biochemistry of the Endolymphatic Sac	Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, Mass. 02114 Harold F. Schuknecht, M.D.	To study postmortem changes in the biochemistry of the inner ear fluids in cat and man in order to establish base line values for comparison with future experimental conditions in animal and pathological conditions in humans; to learn whether postmortem changes in humans and cats are similar. Analyzing inner ear fluids from patients with sensorineural deafness in the postmortem period and correlating the chemical findings with histopathological changes observed in temporal bone sections in order to obtain information on etiology of certain types of deafness.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6109 1/66-12/67 12/68** $86,218	Histopathology and Clinical Findings in Otosclerosis House, W. F. "Relationships of otosclerosis to sensori-neural hearing loss," From the Otologic Medical Group. No year; House, W. F. "Middle cranial fossa approach to the petrous pyramid," A report of 50 cases. **Archives of Otolaryng** 78:460-9, Oct 1963	Los Angeles Foundation of Otology, 2122 W. Third St., Los Angeles, Calif. 90057 William F. House, M.D.	Temporal bones of elderly subjects with otosclerosis and related ear disorders are pledged for study after death. Prior to this they will be given a battery of audiometric and vestibular tests to determine whether the functional responses can be correlated with the site, extent and structural qualities of the otosclerotic lesion, and sensorineural hearing loss.
6130 9/65-8/67 8/68** $34,920	Hearing and Vocal Output Berlin, C. I. "Hearing Loss, palatal paresis and other factors in post-laryngectomy rehabilitation," **J Chronic Dis** 17:677-84 1964	The Johns Hopkins University, 725 North Wolfe Street, Baltimore, Md. 21205 Charles I. Berlin, Ph.D.	Vocalizations of various strains of artificially deafened and genetically deafened mice (wild mice used for controls) are being related to their behavioral audiograms, and the vocal output of normal and deafened mice are to be analyzed and their auditory sensitivity to their own vocalizations are being studied.
6205 12/65-5/67 5/69** $29,584	Tactile Communication of Speech to the Deaf	Queens College of the City Univ. of New York, Flushing, New York Jacob H. Kirman, Ph.D.	The goal of this research is to develop a device which will transform the acoustical energy of speech into tactile display to enable the deaf and deaf-blind to comprehend spoken language and to improve their speech articulation. This apparatus will be tested on normally hearing subjects for phoneme intelligibility.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6408 1/66-12/67 12/70** $96,186	Experimental Studies in Hereditary Deafness Stream, R. W. "An investigation of the time-intensity trading function in relation to Meniere's Disease," **ASHA** 6:398, 1964; Engel, E., Hastings, C. P., Merrill, R. E., McFarland, B.S., Nance, W. S. "Apparent Cri-du-chat and 'anti-mongolism' in one patient," **The Lancet**: 1130-2, May 21, 1966	Vanderbilt University School of Medicine, Nashville, Tenn. 37203 Freeman E. McConnell, Ph.D.	This project is a long-term multidiscipline investigation of many facets of hereditary deafness involving the collaboration of specialists in medicine, genetics, neurology, otolaryngology, radiology, audiology, and psychology. Families of patients with genetically determined hearing loss will be identified and subjected to systematic clinical and experimental analysis for delineation of new genetic disease entities which may lead to new insights into the pathophysiology of deafness.
6411 1/66-12/66 (Terminated) $5,072	A Variable Narrow Band Noise Acoustic Stimulator	University of Maryland, Baltimore, Md. 21201 Edmund M. Glaser, D.Eng.	To develop an instrument which will be of considerable usefulness in experimental investigations concerned with the neurophysiology of hearing, and may also be useful in clinical applications concerned with the investigations of hearing deficits. The instrument proposed has the capability of broadening the range of deliverable acoustic stimuli and thus, will be of great value in the advancement of research in auditory neurophysiology.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6428 7/66-8/67 8/70** $41,112	Embryology of the Inner Ear Ruben, R. J. "Cochlear potentials as a diagnostic test in deafness," **Henry Ford Hospital Symposium on sensorineural hearing processes and disorders.** To be published by Little Brown Company, Dec. 1965; Ruben, R. [illegible]., Glackin, R. "Word discrimination in cats," **J Acoust Soc Amer** (In Press)	New York University Medical Center, 550 First Avenue, New York, New York 10016 Robert J. Ruben, M.D.	Normal and deaf mice will be studied for information on the histogenesis of the inner ear using tritiated thymidine to determine differences in its uptake in the homozygous mutant deaf mice and normal ones.
6532 9/66-8/67 8/68** $20,660	Testing Phonemic Confusion with Monosyllabic Words Owens, E. "The SISI test and VIIIth nerve versus cochlear involvement," **J Speech Hearing Dis** 30:252-62, 1965; Owens, E. "The SISI test and recruitment of loudness by alternate loudness balance," **J Speech Hearing Dis** 30:263-8, 1965	University of California, San Francisco Medical Center, San Francisco, California 94122 Elmer Owens, Ph.D.	To develop a series of word lists for identifying the phonemic confusions involved in hearing loss, and for providing scores that will reflect sensitivity to small differences among individuals; to apply such lists to a study of the amount of discrimination loss and the kinds of phonemic confusions that may uniquely typify different diagnostic categories of hearing impairment; to develop picture-test lists for use in cases where word tests are not appropriate; to investigate a method of testing for phonemic confusions within a sentence context, thus providing an indication of the effects of adjacent sounds on the discrimination of the test sound.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
7304 4/67-3/68 3/70** $39,075	Hearing and Tinnitus in Animals Vernon, J. A., Wever, E. G., Crowley, D. E., Peterson, E.A. "Electrical output of lizard ear: Relation to hair-cell population," Science 150:1172-4, 1965; Vernon, J. A. (Editor) Self-selected test in introductory psychology, W. C. Brown and Company, Inc., Dubuque, 1966, 980 pp.	University of Oregon, Medical School, 3181 S.W. Sam Jackson Park Road, Portland, Oregon 97201 Jack A. Vernon, Ph.D.	To produce and detect tinnitus in animals; to produce tinnitus by administering large non-lethal doses of drugs known to produce ototoxicity and to determine the latency of the drug effect, the duration of its effect, the blood concentrations necessary for the production of tinnitus, the possible ototoxicity of untested drugs. To determine the normal hearing functions of some, as yet uninvestigated, primates.
7092 1/67-12/67 12/68** $21,383	Physical Bases for Binaural Improvement of Hearing	University of Georgia, Athens, Georgia 30601 B. E. Mulligan, Ph.D.	The overall research objective is to determine the physical bases for binaural improvements in hearing to discover the conditions under which two ears function better than one, and conditions under which binaural is better than monaural hearing.
6992* 1/67-12/67 $5,713	Auditory Side Effects of Nitrogen Mustard	Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, Mass. 02114 Charles W. Cummings, M.D.	The purpose is to define the functional and pathological features of hearing loss following administration of large chemotherapeutic doses of nitrogen mustard in patients. Since studies can not be carried out on humans, cats will be trained to react to auditory stimuli, and given large doses of nitrogen mustard for evaluation of the hearing loss followed by histopathological examination of the temporal bones. These experimental animal studies will be augmented by audiometric evaluation of patients with malignant disease before and after the administration of nitrogen mustard.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6970 1/67-12/67 12/68** $11,878	A Neurophysiological Approach to Clinical Audiology McCandless, G. A., Best, L., Larkins, J. H. "A summing computer for measuring evoked auditory responses in man," **Am J Medical Electronics** 4(2): 78-81, Apr-Jun 1965; McCandless, G. A., Best, L. "Summed evoked responses using puretone stimuli," **J Speech and Hearing Res** (In Press)	University of Colorado Medical Center, 4200 East Ninth Avenue, Denver, Colorado 80220 Geary A. McCandless, Ph.D.	To determine if differences in the content of the auditory stimuli produce corresponding changes in the evoked response waveform in normal subjects; to determine if subjects having specific ear pathologies respond qualitatively differently to the various manipulations of the auditory stimulus.
6877 9/66-8/67 8/68** $8,265	Objective Audiometry of the Partially Deaf	Eye Research Foundation, 8710 Old Georgetown Road, Bethesda, Md. 20014 Carl R. Cavonius, Ph.D.	The Waardenburg syndrome is a common cause of congenital deafness in children, and since a similar condition exists in cats, a colony of them are being raised and studied developmentally, genetically, neurologically and histologically to determine the mechanism behind congenital deafness.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6606 6/66-5/67 5/69** $68,049	Human Temporal Bone Pathology Gussen, R. "Basement membranes in the ear," **Ann Otol** 75(4):1124-34, Dec 1966; Gussen, R. "Vesicles and basement membrane changes associated with hydrops of the saccule and endolympathic duct and sac," **Acta Otolaryng** 62:405-10, 1966; Gussen, R. "Globuli interossei as a manifestation of bone resorption," **Acta Otolaryng** 63:411-22, 1967	University of California, 405 Hilgard Avenue, Los Angeles, Calif. 90024 Victor Goodhill, M.D.	A correlative study of premortem (otologic, audiologic and vestibular) data with postmortem temporal bone histopathologic analysis; a series of specific investigative entities within the temporal bone, including bone resorption mechanisms with special relationship to otosclerosis, tympanosclerosis and keratoma, special studies of middle ear and mastoid pneumatic cells, study of temporal bone in relation to age, sex, and systemic pathologic changes, electron microscopy histochemistry, autoradiography and a pilot study correlation of polytome radiography with temporal bone anatomy will be studied.

NATIONAL INSTITUTE OF HEALTH EXTRAMURAL RESEARCH GRANTS ON HEARING DISCRIMINATION (Pages 194-201)

* - Project is completed ** - Extended commitment
Final reports are not yet available on these research projects

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
2161 9/59-8/67 9/71** $205,764	Central Neural Mechanisms of Hearing Thompson, R.F., Kramer, R.F. "Role of association cortex in sensory preconditioning," **J Comp Physiol Psychol** 60(2): 186-91, 1965; Thompson, R.F., Shaw, J.A. "Behavioral correlates of evoked activity recorded from association areas of the cerebral cortex," **J Comp Physiol Psychol** 60(3):329-39, 1965; Thompson, R.F., Spencer, W.A. "Habituation: A model phenomenon for the study of neuronal substrates of behavior," **Psychol Rev** 73(1):16-43, 1966	University of Oregon Medical School, Portland, Oregon 97201 Richard F. Thompson, Ph.D.	An analysis of the organization and functions of auditory and association areas of the cerebral cortex and relevant subcortical mechanisms with cats and monkeys by a variety of techniques. Gross evoked responses of single cell activity by implanting recording microelectrodes in unanesthetized animals and using an average response computer (Enhancetron). Relations between cortical evoked response characteristics and behavioral variables (activity level, novel stimulation, habituation training, orientation responses, and conditioning) and investigating, in addition, a variety of cortical lesions to determine the roles of auditory and association areas of the cortex including auditory discriminations, auditory-visual conditional learning, and sensory preconditioning.
3950* 9/62-8/67 $328,294	Sensory Processes Verrillo, R.T. "Effect of spatial parameters on the vibrotactile threshold," **J Exp Psychol** 71:570-75, 1966; Kletsky, E.J., Adams, W.B. "Model studies of spon-	Syracuse University, College of Engineering, Syracuse, New York 13210 Jozef J. Zwislocki, DsC	To study the phenomenon of central masking in audition and the detectability of vibratory stimuli at various locations of the human body.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
3950* (Continued)	taneous and quasisynchronous activity of single neurons," To be presented at the Symposium on Biomedical Engineering, Milwaukee, Wis., June 24-25, 1966		
4105 9/62-8/67 8/70** $141,483	Auditory Function in Pathologies Melnick, W. "Comfort level and loudness matching for continuous and interrupted signals," **J Speech Hearing Res 10(1): 99-109, Mar 1967**; Bilger, R.C., Hopkinson, N.T., Richardson, J.B. "Detection of cochlear overlay by full-range and discrete frequency bekesy audiometry," **Laryngoscope 76(9):1533-39, Sept 1966**; Hopkinson, N.T., Thomas, S.L. "Two tests of tone decay: their contribution to diagnostic decisions," **Annals of Otology, Rhinology and Laryngology 76(1):189-, Mar 1967**; Bilger, R.C. "Remote masking in the absence of intra-aural muscles," **J Acoust Soc Amer 39(1):103-08, Jan 1966**	University of Pittsburgh, Pittsburgh, Pa. 15213 Robert C. Bilger, Ph.D.	To study the difference between [illegible]e and trained subjects as listeners in psychophysical experiments, so that experiments dealing with the auditory processing of signals can be obtained from naive listeners who have pathologies of the auditory system.
4990 12/63-12/67 12/68** $98,916	Studies on Auditory Sensitivity in Primates Massopust, L.C., Jr., Barnes, H.W., Meder, J., Meder, R. "Deficits in auditory frequency discrimination following	Psychiatric Research Foundation of Cleveland, 1708 Aiken Avenue, Cleveland, Ohio 44109 Leo C. Massopust, Jr., Ph.D.	Using monkeys to determine whether the nature and design of the discrimination task plays a role in auditory sensitivity; how size and location of cortex ablations and subcortical auditory pathway lesions affect discrimination performance; and the

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
4490 (Continued)	temporal and frontal lobe lesions in monkeys," J Aud Res 6:261-76, 1966; Massopust, L.C., Jr., Barnes, H.W., Verdura, J. "Auditory frequency discrimination in cortically ablated monkeys," J Aud Res 5:85-93, 1965		possible effect of interaction of auditory, learning, and memory functions on auditory discrimination performance.
5237 5/64-4/68 4/70** $122,174	Anatomy and Physiology of Brainstem Auditory System Moore, R.Y., Goldberg, J.M. "Projections of the inferior colliculus in the monkey," Experimental Neurology 14:429-38, April 1966; Adrian, H.O., Goldberg, J.M., Brugge, J.F. "Auditory evoked cortical potentials after lesions of brachium of inferior colliculus," J Neurophysiol 29:456-66, 1966	University of Chicago, 5801 S. Ellis Ave., Chicago, Ill. 60637 Jay M. Goldberg, Ph.D.	The discharge of neurons of the superior olivary complex of the dog is being studied to elucidate the physiological mechanisms of binaural hearing.
5563* 4/67-3/68 $58,000	Coding of Auditory Stimuli by the Nervous System	Syracuse University, Laboratory of Sensory Communication, Syracuse, New York George Moushegian, Ph.D.	The study of neurons within several of the auditory nuclei of cats, guinea pigs, and frogs to provide a better understanding of how relatively simple auditory signals are coded by the brain, and how each level in the central nervous system analyzes and integrates sound information. This study should result in a better comprehension of the neurophysiology of hearing and provide the framework for related investigations in audiometry, neurology, and brain functions in general.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5636* 10/64-9/67 $124,107	Selective-Frequency Perception in Auditory Detection	University of Illinois, Graduate School, Urbana, Illinois 61801 Gordon Z. Greenberg, Ph.D.	The goal of the studies is to characterize the frequency-selective behavior of the listener under a few, widely-used conditions including typical situations involving masking of puretones by noise and the uncertain-frequency situations, widely investigated in signal-detection studies.
5700* 1/65-12/67 $114,404	Regulation of Auditory Perception Starr, A. "Response patterns of populations of units along auditory pathway to pure tones and bands of noise," J Acoust Soc Amer 40:1966; Starr, A., Wernick, J.S. "Electrophysiological correlates of binaural beats in superior-olivary complex of cat," J Acoust Soc Amer 40:1966	Stanford University, School of Medicine, Palo Alto, Calif. 94304 Arnold Starr, M.D.	To examine regulatory systems modifying the auditory pathway with experiments on cats and the analysis of: central pathways governing middle ear muscles, the relationship of middle ear muscle activity to the discrimination of sounds and central neuronal mechanisms regulating changes in spontaneous activity appearing as an after-effect of steady sounds.
5710* 9/64-3/67 $28,654	Temporary Threshold Shift Produced by Acoustic Pulses	Callier Hearing and Speech Center, 3819 Maple Ave., Dallas, Texas 75219 Aram Glorig, M.D.	To learn about the permanent effects of impulsive noise through studies of temporary threshold shift (TTS) produced by impulsive noise. To determine the effect of varying impulsive type noise on TTS; to study the effect of continuous exposure to impulsive noise on the cochlea of cats and/or guinea pigs; to determine any differences on TTS between exposures to controlled clicks and exposures to drop hammer noise; to determine the differences, if any, between TTS produced by clicks and by short bursts of filtered white or random noise.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5873* 4/65-3/67 $53,033	Reverberation: Binaural-Monaural Hearing Dirks, D., Carterette, E. "The intelligibility of speech presented to right and left ear in binaural noise," J Acoust Soc Amer 322, Feb 1966; Dirks, D., Chandler, J. "Shifts in auditory threshold produced by contralateral maskers at low intensity level," J Acoust Soc Amer Jul 1966; Dirks, D., Moncur, J. P. "Binaural and monaural speech intelligibility in reverberation," J Sp and Hear Res (In Press)	Division of Head and Neck Surgery, Department of Surgery, UCLA Center for the Health Sciences, Los Angeles, Calif. 90024 Donald D. Dirks, Ph.D.	The objective of the proposed investigation is to study the effects of reverberation on speech discrimination under conditions of binaural and monaural listening. It is suggested that the superiority of the binaural hearing system as compared to monaural listening will increase as the reverberation time in a room increases. The initial investigation will be studied for binaural and monaural listeners.
5883* 4/65-3/67 $63,092	Vibrator Placement—Bone Conduction Dirks, D., Carterette, E. "The intelligibility of speech presented to right and left ear in binaural noise," J Acoust Soc Amer 322, Feb 1966; Dirks, D., Chandler, J. "Shifts in auditory threshold produced by contralateral maskers at low intensity level," J Acoust Soc Amer Jul 1966; Dirks, D., Moncur, J. P. "Binaural and monaural speech intelligibility in reverberation," J Sp and Hear Res (In Press)	UCLA Center for the Health Sciences, Los Angeles, California 90024 Donald D. Dirks, Ph.D.	The proposed investigation is directed toward further clarification of the differences between these two vibrator placements and toward the possible utilization of another location for placement of the vibrator. The comparative effects of the middle ear on frontal and mastoid vibrator placements will be studied on groups of persons with a variety of middle ear problems which are medically reversible without surgery.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5968 9/66-8/67 8/69** $19,687	Threshold Shift Effects of Pure Tones	University of Bridgeport, Bridgeport, Conn. 06602 Richard H. Ehmer, Ph.D.	Investigations on the effects of one pure tone on another are studied over a representatived range of frequency, intensity, duration, and time interval for the understanding these data provide on the frequency selectivity and organization of the auditory mechanism.
5988* 5/67-4/68 $42,216	Some Determinates of Binaural Fusion Schubert, E.D., Tobias, J.V. (Editors) "Chapter on processing of signals by binaural system in Foundations of Modern Auditory Theory," Academic Press, 1965	Stanford University, Stanford, Calif. 94305 Earl D. Schubert, Ph.D.	Investigation of the maximum time disparities between ears permitting fusing of the two. signals into a single perceptual image. The parameters to be varied are carrier frequency of the signals, signal levels, and rate and depth of modulation envelope. Performance of the fused image with different carrier frequencies at the two ears is also being studied.
5998 2/67-1/68 1/70** $32,822	Studies in Loudness	The Regents of the Univ. of Wisconsin, Administration Building, 750 Univ. Avenue, Madison, Wisc. 53706 Richard M. Warren, Ph.D.	Studies on judgment of half loudness show that they are equivalent to estimates of the effect of doubling distance from listener to sound source. There is evidence that cues which indicate distance from the source also influence loudness judgement. The proposed research will examine these cues and study their effect on loudness judgments and by manipulating the experience of subjects with physical scales associated with changes in sensory stimulation, it will be determined if subjective loudness judgment can be altered to correspond with the scales. The results will be related to theories concerning the basis for loudness judgments, and sensation intensity.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6547 5/66-4/68 4/69** $50,963	Information Processing in the Auditory System	University of Pittsburgh, Pittsburgh, Pa. 15213 James C. Boudreau, Ph.D.	To study the responses of single cells in the superior olivary complex of anesthetized cats with auditory stimuli.
6587 6/66-5/68 5/69** $81,210	Studies of Brain Function in Auditory Behavior	Indiana University, Bloomington, Ind. 47401 Jonathan G. Wegener, Ph.D.	Separate studies are being carried out using monkeys as subjects: a study of thalamic degeneration following unilateral lesions of subdivisions of the superior temporal plane of lateral surface of the superior temporal gyrus; sound lateralization discrimination behavior for pure tones, noise, clicks, and monkey sounds; the role of the prefrontal cortex in auditory discrimination behavior; the role of the anterior "non-auditory" superior temporal plane cortex in auditory discrimination behavior; and a study of cross modal transfer between vision and audition in the discrimination behavior of normal and brain-damaged monkeys.
6625 11/65-5/68 5/70** $46,429	Tympanic and Laryngeal Muscle Studies Blevins, C.E. "Fine structure of tympanic muscles," Anat Rec 154:318, 1966; Blevins, C.E., Noble, B. "Innervation of human fetal and neonatal stapedius muscle," Anat Rec 151:325-6, 1965; Blevins, C.E. "Innervation patterns of the human stapedius muscle," (Manuscript submitted to Archives of Otolaryngology, 1966)	Baylor University, College of Medicine, 1200 Moursund Ave., Houston, Tex. 77025 Charles E. Blevins, Ph.D.	The muscles of the middle ear and the larynx of echo-locating bats will be subjected to continued light and electron microscope investigations to determine whether these muscles exhibit the same or different features characteristic of rapidly contracting muscles. Study based on premise that unique neuromuscular or ultrastructural features of these muscles account for their rapid, synchronous and interrelated contractions that occur during echo-location.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6657 9/66-8/67 8/68** $31,632	Single Unit Study of the Inferior Colliculus	School of Medicine, Amer. University of Beirut, Beirut, Lebanon Diran O. Mikaelian, M.D.	The tonotopic arrangement of frequencies in the inferior colliculus to be performed using single unit recording techniques. Important objective will be to show the interplay between the two ears, and correlation to be made at end between neurophysiological results and histological studies.
6862 2/67-1/68 1/69** $14,480	Bilateral Processes in Audition and Somesthesis	Research Foundation of State University of New York, P.O. Box 7126, Albany, New York 12224 Seymour Axelrod, Ph.D.	Objective is elucidation of some of the neural mechanisms concerned with the processing of information presented to the two sides of the body; the auditory studies focus on the loci and modes of the structures underlying certain types of dissociation between inputs to the two ears; the somesthetic studies aim at analysis of the structures involved in certain types of sensory-perceptual equivalence between bilaterally-symmetrical loci on the body surface.
6940 (formerly 4949) 9/63-11/67 11/68** $40,334	Masking Mechanisms Green, D. M. "Masking with two tones," J Acoust Soc Amer 37(5):802-13, May 1965	University of California at San Diego, La Jolla, California 92307 David M. Green, Ph.D.	Research will be conducted on the problem of auditory masking, the ability of one sound to make another sound difficult or impossible to hear; specifically to investigate the masking produced by Sound A, the masking produced by Sound B, and the combined masking produced by both sounds simultaneously.

NATIONAL INSTITUTE OF HEALTH RESEARCH GRANTS FOR INTRAMURAL RESEARCH PROJECTS ON HEARING (Pages 202-206)

* - Project is completed ** - Extended commitment
Final reports are not yet available on these research projects

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
NBD (I)-60LNS/ FN 712* 1/60-6/67 $146,730	The Ascending and Descending Auditory Connections in the Primates Rasmussen, G. L. "Anatomic relationships of the ascending and descending auditory systems," Reprinted from William S. Fields and Bob R. Alford Neurological Aspects of Auditory and Vestibular Disorders, Charles C. Thomas, Publisher, Springfield, Illinois, 1964	Neuroanatomical Sciences Section on Functional Neuroanatomy, NINDB, NIH, Bethesda, Md. 20014 Grant L. Rasmussen, Ph.D.	Extending previous studies of the ascending and descending system of lower mammalian subjects to the primate which possesses anatomical features more similar to that of man; completing anatomical studies this year and will probably continue collaborative anatomico-physiological project on primate with Professor Jean Desmedt, Universite Libre de Bruxelles, Brussels, Belgium; continuing independently anatomical studies of lower level auditory circuits of the primate brain.
NDB (I)-60LNS/ FN 713* 1/60-6/67 $411,970	A Study of the Auditory-vestibular Afferent and Efferent Systems Including the Receptors in the Chincilla and Cat Edited by Rasmussen, G. L., Windle, W. Reprinted from Neural Mechanisms of the Auditory and Vestibular Systems, Charles C. Thomas, Publisher, Springfield, Illinois; Tasaki, I. "Afferent impulses in auditory nerve fibers and the mechanism of impulse initiation in the cochlea," Chapter 3:40-7, (No year)	Neuroanatomical Sciences Section on Functional Neuroanatomy, NINDB, NIH, Bethesda, Md. 20014 Grant L. Rasmussen, Ph.D.	Continuing to reveal unknown anatomical neuronal connections of the afferent and efferent divisions of the auditory and vestibular system; to gain more information about the anatomical and functional interrelationships of these two systems.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
NDB (I)-62LNP/SC 973* 1/62-6/67 $254,413	Integrative Mechanisms in the Central Auditory Pathway Nelson, P.G., Erulkar, S.D., Bryan, J. "Natural and simulated responses of units of the inferior colliculus to time-varying acoustic stimuli, "J Neurophysiol 29(5):834-60, 1966; Erulkar, S. D., Nelson, P. G., Bryan, J.S. "Experimental and theoretical approaches to neural processing in the central auditory pathway," In Contributions to Sensory Physiology, Vol. 3, ed. W.D. Neff, Academic Press, Inc., N.Y., 1966 (In Press); Nelson, P.G., Erulkar, S.D. "Synaptic mechanisms of excitation and inhibition in the central auditory pathway," J. Neurophysiol 26:908-23, 1963	Laboratory of Neurophysiology Section on Spinal Cord, NINDB, NIH, Bethesda, Md. 20014 E. F. Evans, M. D. P. G. Nelson, M.D., Ph.D.	Analyzing the neural processing of sensory information that occurs in various levels of the auditory system.
NDB (CF)-64B 1187* 7/64-6/67 $9,296	Study of Association Between Factors of Pregnancy, Labor and Delivery and the Occurrence of Deafness in Children	Collaborative and Field Research Biometrics Branch, NINDB, NIH, Bethesda, Maryland 20014 Hyman Goldstein, Ph.D. Irving D. Goldberg, M.P.H.	Determining whether mothers of deaf children are characterized by an excess of selected prenatal and perinatal disorders as compared to mothers of the total population of live births surviving the neonatal period; and to determine whether the distribution of birth weights among deaf children was different from that of the total population of live births surviving the neonatal period.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
NDB (I)-65LNS/ FN 1229* 7/64-6/67 $39,683	Fine Structure of Afferent and Efferent Nerve Endings in the Cochlear Nucleus of Normal and Experimental Animals Rasmussen, G.L. "Efferent connections of the cochlear nucleus," Contributions to Henry Ford Hospital International Symposium on Sensorineural Hearing Processes and Disorders (Chapter for a book to be published by Little Brown and Company, 1965); Boord, R.L., Rasmussen, G.L. "Projection of the cochlear and lagenar nerves on the cochlear nuclei of the pigeon," J Comp Neurol 120(3):463-75, Jun 1963; Rasmussen, G.L. "Relative population of afferent and efferent synapses of the cochlear nucleus," to be presented at Meeting of American Association of Anatomists, San Francisco, Calif., Apr 5-8, 1966 (Manuscript-Jan. 1966)	Neuroanatomical Sciences Section on Functional Neuroanatomy, NINDB, NIH, Bethesda, Md. 20014 Grant L. Rasmussen, Ph.D.	This research is to determine the ultrastructural difference between the cochlear nerve afferent endings in different subdivisions of the cochlear nucleus and those of efferent fibers originating from higher auditory centers previously established by light microscopic studies of Dr. G. L. Rasmussen, and to study ultrastructural alterations in the nerve cells deprived of synapses.
NDB (I)-65LNS/EE 1233* 7/64-6/67 $80,815	Morphogenesis of the Inner Ear Ruben, R.J. "Development of the inner ear of the mouse: a radioautographic study of terminal mitoses," Acta Otolaryngologica, Supplementum 220, Narvavagen, Stockholm, 1967, 44 pp; Ruben, R.J., Sidman, R.D. "Histological technique for serial section radioautography of the inner ear," for publication in the Archives of Otolaryngology	Neuroanatomical Sciences Section on Experimental Embryology, NINDB, NIH, Bethesda, Md. 20014 Robert J. Ruben, M.D.	Determining the distribution in time and space of the terminal mitoses in populations of 18 cell types in the developing inner ear of the mouse by injecting tritiated thymidine into pregnant mice during gestation, and analyzing autoradiographically the inner ears of the offspring.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
NDB (CF)-66E 1322* 1/65-6/67 $23,950	Otitis Media and Hearing Loss on Guam	Collaborative and Field Research, Epidemiology Branch, NINDB, NIH, Bethesda, Md. 20014 Roswell Eldridge, M.D. Jacob A. Brody, M.D.	This study is to determine the contribution made by otitis media on 201 out of 1541 school children on Guam who have significant hearing loss and who have been retested audiometrically. Results of the audiometric testing are to be reviewed in an effort to determine if hearing loss remains a significant problem in this adult population. Studies of the possibly unique etiology of chronic otitis media on Guam are also contemplated.
NDB (I)-67/OAD 1460* 7/66-6/67 $3,750	Survey of Feasibility of Visible Speech Display as an Aid for the Deaf	Office of Associate Director, NINDB, NIH, Bethesda, Md. 20014 Rosalind B. Marimont, B.A.	Studies on the use of visual display of speech to aid in speech training of the deaf.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
NDB (CF)-67PR/ SLH 1520* 7/66-6/67 $6,250	Explorative Study for the Use of a Speech, and Language Screening Examination for 3-Year-Old-Children in the Home Situation	Perinatal Research Branch, Section on Speech, Language and Hearing, NINDB, NIH, Bethesda, Md. 20014 Miriam F. Fiedler, Ph.D.	This is the first of two studies to try and determine the most efficient way of identifying those 3-year-olds whose speech and language development is atypical and may be associated with neurological and sensory defects. At Boston, the Children's Medical Center has developed a home interview form designed to obtain information on the child's speech, language and hearing from the mother; a comparative study of children whose mothers have been interviewed with this form, and on whom (the children) speech, language and hearing examination results are available, is contemplated. Sorting and analysis of the data is being accomplished with manual rather than computer methods.

NATIONAL INSTITUTE OF HEALTH EXTRAMURAL RESEARCH GRANTS ON INNER EAR - COCHLEA (Pages 207-221)

* - Project is completed ** - Extended commitment
Final reports are not yet available on these research projects

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
269 1/53-3/68 3/71** $315,476	Circulation of the Inner Ear Kimura, R., Perlman, H.B. "Arterial obstruction of the labyrinth. Part I. Cochlear changes," Annals of Otol, Rhino and Laryng 67(1): 5, Mar. 1958; Perlman, H.B., Kimura, R., Butler, R.A. "Cochlear blood flow during hypothermia," Annals of Otol, Rhino and Laryng 68(3):803, Sep. 1959; Tsunoo, M., Perlman, H.B. "Cochlear oxygen tension," 59:437-50 (Rec'd for publication Aug. 25, 1964)	University of Chicago, 950 E. 59th Street, Chicago, Ill. 60637 John R. Lindsay, M.D.	Two methods for investigating the relationship between graded brief reductions of carotid blood pressure and cochlear blood flow, cochlear function and cochlear oxygen tension.
682 9/54-8/67 8/69** $267,474	Alterations of Cochlear Potentials Fernandez, C. "Innervation of the cochlea in relation to hearing loss," Laryngoscope 79(4):363-72, Apr. 1960; Schmidt, R.S., Fernandez, C. "Development of mammalian endocochlear potential," J Exp. Zool 153 (3):227-34, Aug. 1963; Johnstone, C.G., Schmidt, R.S., Johnstone, B.M. "Sodium and potassium in vertebrate cochlear endolymph as determined by flame microspectrophotometry," Comp Biochem Physiol 9:335-41, 1963	University of Chicago, School of Medicine, 5801 S. Ellis Avenue, Chicago, Ill. 60637 Cesar Fernandez, M.D.	Research on cochlear potentials, electron microscopy on stria vascularis injected with ferritin, and studies on Monakow's stria in the medulla was associated with degeneration in the cells of the dorsal cochlear nucleus with localized lesions showing degeneration in the superior olive, nucleus of the lateral lemniscus, and inferior colliculus.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
966 1/56-12/67 12/69** $376,544	Cytology, Biochemistry, and Physiology of the Inner Ear Bryan, W.T.K., Bryan, M.P., Smith, C.A. "Human ciliated epithelial cells in nasal secretions," Ann Otol 73(2): 474-87, Jun. 1964; Smith, C.A., Rasmussen, G.L. "Degeneration in the efferent nerve endings in the cochlea after axonal section," J Cell Biol 26(1): 63-77, 1965	Washington University, Skinker and Lindell, St. Louis, Mo. 63130 Catherine A. Smith, Ph.D.	Elucidation of the basic biological principles and specializations which participate in cochlear and vestibular activity by innervation pattern studies and cytochemical studies using pigeon and chinchilla ears.
1344* 6/57-5/68 $1,372,118	Physiological Studies of the Auditory System Koerber, K.C., Pfeiffer, R.R., Warr, W.B., Kiang, N.Y.S. "Spontaneous spike discharges from single units in the cochlear nucleus after destruction of the cochlea," Experimental Neurology 16:119-30, 1966; Pfeiffer, R.R. "Classification of Response patterns of spike discharges for units in the cochlear nucleus: Tone-Burst stimulation," Experimental Brain Research 1:220-35, 1966; Warr, W.B. "Fiber degeneration following lesions in the anterior ventral cochlear nucleus of the cat," Experimental Neurology 14:453-74, April 1966	Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, Mass. 02139 W. A. Rosenblith, Ing. (Ingenieur Radiotelegraphiste)	Electrophysiological and anatomical studies on the cat's auditory system; signal transmission in middle ear; intracochlear potentials and anatomical projections of cochlear nucleus; responses of single fibers in auditory nerve; probabilities associated with spike discharges in auditory nerve fibers; effect of electrical stimulation of crossed olivocochlear bundle on auditory nerve responses; combined anatomical and physiological study of superior olivary complex.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
1631* (Terminated) 12/57-11/66 $93,660	Study of the Central Connections of the Auditory System Stotler, W.A. "Study of the central connections of the auditory system," Progress Report December 1, 1957 through November 30, 1958	University of Oregon, School of Medicine, Portland, Oregon 97201 W. A. Stotler, Ph.D.	A continuation of a neuro-anatomical study of the central pathway of the auditory system using the cat, monkey, opossum, and whale.
1908* 5/59-4/67 $100,711	A Critical Evaluation of Audition in the Aged Reger, S.N. "Audiology for the general practitioner," **Am Acad Gen Practice** 32:123, 1965; "Pure-tone audiometry," **Audiometry Principles and Practices**, Williams and Wilkins Co., Baltimore, p. 108, 1965	University of Iowa, Iowa City, Iowa 52240 Scott N. Reger, Ph.D.	To investigate the nature of certain changes in the functional efficiency of the peripheral auditory mechanism and of the auditory neural tracts and higher centers of individuals between 50 and 90 years of age. The integrity of the cochlear structures will be described in terms of threshold sensitivity over the audiometric frequency and intensity ranges, loudness and pitch discrimination and resistance to temporary threshold shift (fatigue) resulting from exposure of the ear to noise.
2517* 4/60-3/68 $236,429	Metabolic and Ototoxic Changes in the Cochlea Mizukoshi, O. "Biochemical approach to the cochlea," Scientific Exhibit, **8th Int Congr Oto-Rhino-Laryngology**, Tokyo, 1965	New York University Medical Center, 550 1st Ave., New York, New York 10016 John F. Daly, M.D.	Studies involving oxygen consumption will be continued using normal guinea pigs and guinea pigs intoxicated with Kanamycin and Viomycin. The oxygen consumption of the cochleae of Shaker mice will be investigated. The effects of ototoxic drugs in vivo and of ouabain on Na+K+dependent ATPase will be investigated. Techniques have been developed for the efficient removal and subsequent culture of otocysts.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
2517* (Continued)			Succinic dehydrogenase activity and acetylcholinesterase activity are being studied in the cultured otocyst and the developing cochlear nerve.
2674* 4/60-3/68 $365,952	Metabolism of the Inner Ear Petrovic, A., Shambaugh, G.E., Jr. "Promotion of bone calcification by sodium fluoride."	Northwestern University, 619 Clark Street, Evanston, Ill. 60201 G. E. Shambaugh, Jr., M.D.	Investigations on the effect of NaF on bone calcification are being completed as the effects of other elements on bone calcification are being studied in conjunction with NaF. A comparison of the thyroids of animals will be made, using the tissue culture techniques. A follow-up on a study of callus bone formation and its changeability under the influence of certain chemicals, as well as the alterations of the fractured bone itself.
2941 6/60-5/68 5/70** $139,991	Discharge Patterns in Response to Binaural Stimulation Nelson, P.G., Erulkar, S.D., Bryan, J. S. "Responses of units of the inferior colliculus to time-varying acoustic stimuli," J Neurophysiol 29(5): 834-60, 1966; Erulkar, S.D., Sprague, J.M., Whitsel, B.L., Dogan, S., Jannetta, P.J. "Organization of the vestibular projection to the spinal cord of the cat," J Neurophysiol 29(4):626-62, 1966	Department of Pharmacology, School of Medicine, Univ. of Pennsylvania, Philadelphia, Pa. 19104 Solomon D. Erulkar, Ph.D.	Intracellular records have been obtained from cells of the cat cochlear nucleus, and responses recorded to pure tonal and to frequency-modulated (FM) stimuli. Intracellular records have been obtained from cells of the rabbit superior cervical ganglion. Renshaw cells have been identified in cat spinal cord by staining individual cells with fast green FCF dye through the microelectrode.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
2973 1/61-12/67 12/68** $156,823	The Functions of the Cochlea Wever, E.G., Vernon, J.A., Peterson, E.A. "The high-frequency sensitivity of the guinea pig ear," **Proc Nat Acad Sci USA 49:319-22, Mar. 1963**; Wollack, H.C. "The auditory acuity of the sheep (Ovis Aries)," **The Journal of Auditory Research 3:121-32, 1963**	Princeton University, Graduate School, Princeton, New Jersey E. G. Wever, Ph.D.	To further understand the processes in the cochlea through which characteristics of a sound stimulus are translated into neural messages and to compare cochlear potentials with auditory nerve potentials in animals with simple ears (lizards) to discover the relationships between these two levels of activity.
3410* 9/61-8/67 $160,317	The Dynamics of Ear Fluids Lawrence, M. "Histological evidence for localized radial flow of endolymph," **Arch Otolaryng 83:406, 1966**; Lawrence, M. "Dynamic range of the cochlear transducer," **Cold Spring Harbor Symposia on Qualitative Biology, 30:159-67, 1965**; Lawrence, M. "Possible influence of cochlear otosclerosis on inner ear fluids," **Ann Otol 75:553-58, 1966**	University of Michigan, Ann Arbor, Mich. 48104 Merle Lawrence, Ph.D.	To study the nature of nutrient exchange between inner ear fluids and structures of the organ of Corti. Meniere's syndrome is characterized by a bulging of Reissner's membrane indicating an imbalance of fluid amounts. Project proposes to study the properties of Reissner's membrane as well as the source and disposition of the inner ear fluid constituents.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
3654 4/62-3/68 3/69** $267,404	Cochlear Analysis: New Modified Place Theory Tonndorf, J., Khanna, S.M., Fingerhood, B.J. "The input impedance of the inner ear in cats," **Ann Otol 75:752,** Sep. 1966; Kaufman, R.S., Tonndorf, J., Khanna, S. "Short-Term changes in cochlear microphonics after perforation of the saccule in the cat," **The Laryngoscope,** 76:719-32, Apr. 1966	College of Physicians and Surgeons, Columbia University, 630 W. 168th Street, New York, New York 10032 Juergen Tonndorf, M.D.	To investigate the mechanical properties of the ear by studying several details of middle and inner-ear function which have bearing upon middle-ear transmission of air-borne sound including: efficiency of the middle-ear transformer impedance of the stapedial footplate; inner-ear impedance; contribution of vibratory responses to the reception of air-borne sound.
4143 9/62-8/67 8/68** $68,721	Cochlear Hair Cell Metabolism and Cochlear Potentials Chambers, A.H., Lucchina, G.G. "Effects of dinitrophenol on cochlear potentials of the cat. I. Normal Ear," **Journal of Auditory Research** 6:13-21, 1966; Lucchina, G.G., Chambers, A.H. "Effects of dinitrophenol on cochlear potentials of the cat. II. Acoustically injured ear," **Journal of Auditory Research** 6:23-30, 1966	The University of Vermont, Burlington, Vt. 05401 Alfred H. Chambers, Ph.D.	To study the relationship between metabolism of the hair cells of the organ of Corti and cochlear electrical potentials generated as an accompaniment of stimulation of these cells and to study the relationship between cochlear potentials and blood oxygen supply.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
4615 9/63-8/67 8/68** $136,563	Fluid Barriers Within The Cochlea Duvall, A.J., Flock, A., Wersall, J. "The ultrastructure of the sensory hairs and associated organelles of the cochlear inner hair cell with reference to directional sensitivity," J. Cell Biol 29(3):497-505, 1966	University of Minnesota, Minneapolis, Minn. 55455 Arndt J. Duvall, III, M.D.	Investigating ultramicroscopic anatomical changes which occur with various manipulation of barriers within the otic capsule of guinea pigs (organ of Corti, stri vascularis, limbus) and pathological conditions of mechanical rupture of Reissner's membrane from intermixing of endolymph and perilymph-fluid interchange to be studied through injection of thorotrast and ferritin into the vascular system, scalai vestibuli and tympani.
4627 6/63-5/68 5/70** $195,587	Cochlear Assessment of Auditory Sensitivity Cutt, R.A., Wolfson, R.J., Ishiyama, E., Rothwarf, F., Myers, D. "Preliminary results with experimental cryosurgery of the labyrinth," Arch Otolaryngology 82:147-58, Aug. 1965; Rothwarf, F., Cutt, R.A., Wolfson, R.J. "A versatile low-temperature probe for application to cryosurgery," Advances Cryogenic Engineering 10:393-7, 1965	Presbyterian-Univ. of Pennsylvania Medical Center, 51 N. 39th Street, Philadelphia, Pa. 19104 Roger A. Cutt, Ph.D.	To establish the certainty with which changes in auditory sensitivity to pure-tone stimuli can be predicted from cochlear potential recordings. An avoidance conditioning paradigm is employed to obtain absolute auditory thresholds and cryogenic, ultrasonic, and mechanical means of producing cochlear lesions.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
4740 12/63-11/67 11/68** $137,847	Space-Time Patterns of Electrical Activity of the Ear Teas, D.C. "Analysis of evoked and ongoing electrical activity at the scalp of human subjects," **J Speech Hearing Res 8(4):371-87**, Dec. 1965; Teas, D.C. "Interactions between synchronous neural responses to paired acoustic signals," **J Acoust Soc Amer 39(6):1077-85**, 1966	University of Pittsburgh, Pittsburgh, Pa. 15213 D. C. Teas, Ph.D.	To study physiological correlates for discriminative behavior; to define the relations among electrical potentials of the cochlea using guinea pigs and chinchillas; to utilize signals for physiological specifications at the cochlea to evoke electrical responses at the cortex; and to present these signals, extract behavioral responses, and determine any differences between their electrical responses.
4993 4/64-3/68 3/72** $64,932	Anatomical Studies of the Internal Ear Baird, I. L. "Some features of the aural anatomy of the turtle, Trionyx Spiniferus," **Amer Zool 4(4):79**, Nov. 1964	The University of Tennessee Medical Units, 62 South Dunlap Street, Memphis, Tennessee 38103 Irwin L. Baird, Ph.D.	To contribute to the body of scientific information concerning the comparative anatomy and evolution of the reptilian internal ear; studies are to encompass general morphology of the ear, histology, and cytology.
5016 1/64-12/67 12/69** $152,171	Electro-Anatomy of Cochlea Konsihi, T., Kelsey, E., Singleton, G.T. "Effects of chemical alteration in the endolymph on the cochlear potentials," **Acta Oto-Laryng 62:394-404**, 1966	University of Florida, College of Medicine, Gainesville, Fla. 32603 Teruzo Konishi, M.D.	Using guinea pigs and cats, the permeability of the cochlear partition will be altered experimentally, and its effect on the cochlear function studied. The effect of chemical alteration in the cortilymph on the cochlear function will be tested and the mechanism of the auditory efferent nerve ending studied pharmacologically.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5056* 6/64-5/67 $29,944	An Experimental Study of Avian Auditory Pathways Boord, R.L. "Efferent projections of cochlear nuclei of the pigeon," Am Zool 5(4):669, 1965	University of Delaware, Newark, Delaware 19711 Robert L. Boord, Ph.D.	Research on the pathways and connections of ascending sensory auditory neurons between the primary cochlear nuclei in the medulla and the midbrain auditory centers of pigeons. Experimental axonal degeneration methods being used to study internuclear fiber connections among nucleus angularis, nucleus magnocellularis, and nucleus laminaris; the contributions of these three nuclei to the trapezoid body and lateral lemniscus, and the course and termination of the fibers of the lateral lemniscus.
5282* 4/64-3/67 $21,852	Physiologic-Audiometric Responses to Acoustic Stimuli Finck, A., Sofouglu, M. "Auditory sensitivity of the mongolian gerbil," J Aud Res 6:313-9, 1966; Finck, A. "Physiological correlate of tonal masking," J Acoust Soc Amer 39(6):1056-62, Jun. 1966	Temple University, School of Medicine, Philadelphia, Pa. 19140 Alfred Finck, Ph.D.	Use of the golden hamster to determine the functional relationships which underlie the three measures of auditory sensitivity and to assess the discrepancies between the response measure for low, middle, and high frequency stimuli.
5352* 6/64-5/68 $87,243	Circulation of the Inner Ear	Massachusetts Eye and Ear Infirmary, 243 Charles St., Boston, Mass. 02114 John W. Irwin, M.D.	To determine interaction of inner ear fluids (interaction between spinal fluid, perilymph, and endolymph) and the microcirculation to determine the physiological nutrition of the inner ear neural tissue.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5406* 9/64-8/67 $35,816	Cerebrospinal Fluid Pressure Influences Upon Hearing Feldman, R.M., Allen, G.W. "Effects of cerebrospinal fluid pressure on the cat cochlea," **Arc Otolaryng 84:422-5,** Oct. 1966	Northwestern University Medical School, 303 E. Chicago Avenue, Chicago, Illinois George W. Allen, M.D.	To study the influence of increasing perilymphatic pressure: by increasing cerebrospinal fluid pressure, by raising pressure directly, and by measuring bone conduction thresholds under conditions of increased pressure, upon the cochlear potentials measured in cats.
5532* 1/65-12/67 $81,505	Studies of the Amphibian and Reptilian Organ of Corti Miller, M.R. "The cochlear duct of lizards and snakes," **Amer Zool 6(3):** 421-29, Aug. 1966; Miller, M.R. "The cochlear duct of lizards," **Proc Calif Acad Sci 33(11):255-359,** Mar. 1966; Miller, M.R. "The cochlear ducts of 'Lanthanotus and Anelytropsis' with remarks on the familial relationship between 'Analytropsis and Dibamus'," **Occasional Papers of the Calif Acad Sci 60:1-15,** Sep. 1966.	University of California, San Francisco Medical Center, San Francisco, California 94122 Malcolm R. Miller, Ph.D.	The gross, microscopic, and ultrastructural anatomy of the cochlear duct of lizards, snakes, turtles, and alligators is being studied. The cochlear duct of these species offers a rich source of material for studying the numerous modifications of the auditory mechanism.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5800* 6/65-5/68 $61,724	Auditory Systems Webster, D.B. "Ear Structure and function in modern mammals," Amer Zool 6:451-66, 1966; Ackermann, R.W., Webster, D.B. "The central auditory system of the kangaroo rat," Amer Zool 6(4):—Nov. 1966; Webster, D. B., Stack, C.R. "Comparative carbohydrate and protein staining of the organ of corti of kangaroo rat, gerbil, and guinea pig," Anat Rec 157(2): Preprint, Feb. 1967	New York University, New York, New York 10003 Douglas B. Webster, Ph.D.	To study the comparative gross and microscopic anatomy of the middle and inner ears of eighteen species of heteromyid rodents (kangaroo rats, gerbils, and guinea pigs). Correlation of endocochlear, microphonic, and mass action potentials.
6261 6/66-5/68 6/69** $26,795	Pharmacological Investigation of the Cochlea	L.S.U. Medical Center, 1542 Tulane Avenue, New Orleans, La. 70112 E. A. Daigneault, Ph.D.	The investigation of the cochlea by means of recordings from the round window and retrograde arterial injections of various cholinergic drugs to explain the possible ototoxicity of quinine, streptomycin, kanamycin, and neomycin.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6306 2/66-1/68 1/69** $70,753	Evoked Potentials in Audiovestibular Research Cody, D.T., Simonton, K.M., Hallberg, O.E., Hedgecock, L.D. "Stapedectomy for otosclerosis: An analysis of results," **Mayo Clinic Proceedings** (In Press, 6/65); Simonton, K.M., Cody, D.T.R. "The effects of corticosteroids on certain cases of sensori-neural hearing loss," Read at **Pan-Amer. Congress of Otolaryngology and Broncho-esophagology**, Bogota, Columbia, Feb. 23-28, 1964 (In Press, 6/65)	Mayo Foundation, 200 1st Street Southwest, Rochester, Minn. 55901 Douglas T.R. Cody, M.D.	To confirm the accuracy of cortical audiometry in determining air conduction thresholds in adults; to establish whether or not cortical audiometry can be useful in determining the auditory threshold for bone conduction and to study the influence of masking on the determination of the threshold of hearing; to confirm that cortical audiometry can accurately assess the true cochlear status of patients with deafness due to emotional disturbances; to determine the effect on cortical audiometry of lesions of the central nervous system; to study the effects, if any, of drug-induced sleep on cortical audiometric studies to determine whether there are differences in the character of the averaged evoked vertex response in infants and children as compared to the response in adults. Long-range goal is to evolve an objective method of easily and accurately evaluating the hearing of infants, children, and adults who for various reasons cannot be tested satisfactorily by conventional audiometric methods.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6363 1/67-12/67 12/68** $48,479	The Effects of Local Anesthetics on the Inner Ear	Vanderbilt University, School of Medicine, Nashville, Tennessee. 37203 Paul H. Ward, M.D.	To study the electrical potentials from the inner ear (summating potential cochlear microphonics, organ of corti resting potential, and endocochlear potential) and the action potentials from the 8th nerve of guinea pigs as they are affected by local anesthetics.
6505 1/66-12/67 12/68** $43,161	Auditory Psychophysics and Electrophysiology Dalland, J.I. "Auditory thresholds in the bat: A behavioral technique," **J Aud Res** (In Press)	Bowman Gray School of Medicine, Wake Forest College Winston Salem, North Carolina 27103 John I. Dalland, Ph.D.	To provide basic psychophysical and electrophysiological data on the auditory capacities of the bat by means of a conditioned response technique to assess the ability of the unanesthetized bat to discriminate changes in frequency and changes in intensity of auditory signals over a broad frequency range. Calculations of critical bandwidths will be measured and cochlear microphonic potentials recorded.
6524 6/66-5/68 5/69** $80,230	Peripheral Auditory Responses	University of Miami, Coral Gables, Fla. 33124 Ernest A. Peterson, Ph.D.	To study the peripheral auditory capacities of animals using the cochlear potential as an index of function and certain characteristics of peripheral auditory systems, such as sensitivity, maximum output, linearity and bandwidth, as a basis for intergroup comparisons; to establish a temporal bone library.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6575 9/66-8/67 8/69** $59,171	Metabolic Processes of the Inner Ear Matschinsky, F.M., Thalmann, R. "Quantitative histochemistry of the organ of Corti, stria vascularis and macula sacculi of the guinea pig. I. Sampling procedures and analysis of pyridine nucleotides," Laryngoscope 77 (3):292-305, Mar. 1967	Washington University School of Medicine, 517 South Euclid, St. Louis, Mo. 63110 Ruediger Thalmann, M.D.	To study the sources and main routes of energy-producing metabolism important in the transformation process of the inner ear by artificial arterial perfusion of the inner ear.
6730 9/66-8/67 8/69** $39,137	A study of Cochlear Generator Potentials	Northwestern University School of Medicine, 619 Clark Street, Evanston, Ill. 60201 Peter J. Dallos, Ph.D.	To determine whether there are separate receptor and generator potentials in the peripheral auditory system through the recording of electrical activity simultaneously from the initial non-myelinated segment of the auditory nerve within the osseous spiral lamina and from across the cochlear partition.
7041 2/67-1/68 1/70** $43,609	Functions of the Cochlear Nucleus Crowley, D.E., Hepp-Reymond, M.C., Tabowitz, D., Palin, J. "Cochlear potentials in the albino rat"; Crowley, D.E., Hepp-Reymond, M.C. "The development of cochlear function in the ear of the infant rat," **J Comp Physiol Psychol** (In Press)	Middlebury College, Middlebury, Vermont 05753 David E. Crowley, Ph.D.	To study the functional organization of the cochlear nucleus complex (and the auditory nerve and acoustic centers higher than the cochlear nucleus when relevant) in an attempt to understand the mechanism employed in the lower auditory centers of the rat's brain for the processing of information relayed by the auditory nerve.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
7159* (formerly 6133) 6/66-8/67 $49,396	Electron Microscopic Study of the Cochlea Yamamoto, K., Nakai, Y. "Electron-microscopic studies on the functions of the stria vascularis and the spiral ligament in the inner ear," **Ann Otol** 73: 332, 1964; Nakai, Y. "Histochemical study of the stria vascularis in the inner ear by electron microscopy," Submitted for publication to **Ann Otol.**	Yale University, 333 Cedar Street, New Haven, Conn. 06510 Yoshiaki Nakai, M.D.	Physiological and biochemical aspects of the cochlea and the effect of ultrasonic radiation in the vestibular ganglion cells to be studied under electron microscope. Intravenously injected ferritin to be traced into stria vascularis and spiral ligament to study the barrier between capillaries and endo and perilymphatic space. The oxidative enzyme system in the same area to be studied with a new cytochemical technique.

NATIONAL INSTITUTE OF HEALTH EXTRAMURAL RESEARCH GRANTS ON COMMUNICATIVE DISORDERS (Pages 222,223)

* - Project is completed   ** - Extended commitment
Final reports are not yet available on these research projects

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5616* 4/64-3/68 $168,997	Nomenclature of Communicative Disorders Riviere, M. "Proceedings of Workshop on classification of language comprehension for use with children and adults," Jan 1964	The Rehabilitation Codes, Inc., 1860 Broadway, New York, New York 10023 Maya Riviere, Ph.D.	A four-year-program of fieldtesting, revision, and teaching conferences on the use of the Impairment-Cause-Etiology Codes on Communicative Disorders developed during the period 1959-1964, and current program began in 1964. National conferences were held: Bethesda (1962), and in Carmel (1964); four regional teaching conferences were held: Nantucket (1964), Berea (1965), Carmel Valley (1966), and in Ozarks (1967). Fieldtesting has involved use of the Codes in a variety of programs, and complete revision of the entire coding text and structure has been completed (November 1966) to be used in the final Regional Workshop and printed for wide distribution.
5972 6/65-5/67 5/69** $34,361	Communication and Behavior Stout, J. "The significance of sound production during the reproductive behavior of Notropis analostanus (Family Cyprinidae)," **Animal Behaviour**, 1966 (In Press); "Sound communication in fishes, Proceedings of the Third Annual Conference on Biological Sonar and Diving Mammals," 1966 (In Press)	Walla Walla College, College Place, Wash. 99323 John F. Stout, Ph.D.	Understanding the techniques used by **Larus glaucescens** (sea gulls) in communication between different territorial members of a breeding population with vision and sound being considered as the sensory modes involved in communication.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6244* 4/65-12/67 $25,000	Communicative Disorders Program Development	University of California Medical Center, San Francisco, Calif. 94122 Francis A. Sooy, M.D.	Council Subcommittee on Communication serving as an Institute ad hoc focal point in area of communication by reviewing what is known about communication and communicative disorders; identifying the research and research training needs in these areas; and advising the Director of the National Institute of Neurological Diseases and Blindness and National Advisory Council of the NINDB on program development needs in these areas.

NATIONAL INSTITUTE OF HEALTH EXTRAMURAL RESEARCH GRANTS ON MIDDLE EAR, OTOSCLEROSIS, OTITIS, EQUILIBRIUM LOSS (Pages 224-227)

* - Project is completed   ** - Extended commitment
Final reports are not yet available on these research projects

Grant Number Starting Date and Duration Cost	**Project Title and Selected Publications**	**Sponsoring Institution and Project Director**	**Description of Research**
969* 9/62-8/67 $406,682	Pathogenesis of Middle Ear Effusions Rosenblut, B., Ahlvin, R. C., Carr, C. D., Senturia, B. H. "Silicone implants in the mastoid portion of the temporal bone," **Annals Otology, Rhinology, Laryngology** 75(3):890-902, 1966; Carr, C. D., Ahlvin, R. C., Senturia, B. H. "Middle ear effusions," (Further studies on experimentally produced pathologic changes in the dog bulla) **Acta Oto-laryngologica** 63: 1-6, 1967	Washington University School of Medicine, Skinker and Lindell Blvds., St. Louis, Mo. 63130 Ben H. Senturia, M.D.	To correlate the composition of middle ear effusions with accompanying bio-chemical and histopathological events in the underlying mucoperiosteal tissues and to study the possible role of the lymphatic channels of the accessory sinuses and nasopharynx in conveying organisms from the lining membrane of the sinuses to the middle ear via the nasopharynx and eustachian tube. The chemical and histopathological phases of the study are proposed to be complementary in providing a means of delineating the pathogenesis of otitis media.
1791 9/58-8/67 8/68** $220,639	Metabolism of Bony Otic Capsule Costa, O. A., Covell, W. P. "Variations in the enchondral bone of the otic capsule," **The Laryngoscope** 75(9): 1462-76, Sep 1965; Costa, O. A., Thalmann, R., Covell, W. P. "Arterial perfusion of the inner ear," **The Laryngoscope** 76(12):1874-88, Dec 1966; Costa, O. A., Covell, W. P. "Developing enchondral bone of the otic capsule," **The Laryngoscope** 77(3):281-	Washington University School of Medicine, Skinker and Lindell Blvds., St. Louis, Mo. 63130 Walter P. Covell, M.D., Ph.D.	Chief purpose is to attempt a better understanding of the bone of the otic capsule, particularly the enchondral layer and further studying the dynamics of the remodeling process in this layer with the possibility of throwing some light upon the origin of the otosclerotic focus.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
1791 (Continued)	91, Mar 1967 A Tetracycline Study (Guinea Pig); Costa, O. A. "Inner ear pathology in experimental diabetes," **The Laryngoscope** 77(1):68-75, Jan 1967		
2806* 9/60-8/67 $125,706	Objective Measurement of Middle Ear Function Elpern, B.S., Andersen, H. C. "Experimental studies on sound transmission in the human ear, VII. The influence of age and post-mortem factors," **Acta Otolaryng** 61(5):403-7, 1966; Elpern, B. S., Elbrond, O. "Acoustic effects of removing the malleus head," **Arch Otolaryng** 84:74-6, Aug 1966; Elbrond, O., Elpern, B. S. "Reconstruction of the ossicular chain," **Arch Otolaryng** 84:490-4, Nov 1966	University of Chicago Medical School, 950 East 59th Street, Chicago, Illinois Ralph F. Naunton, M.D.	To evaluate the objective methods of measuring the physical and physiological characteristics of the middle ear and the value of these measurements in detecting and delineating middle ear pathology.
3376 9/61-12/67 12/69** $314,580	Pathology and Pathogenesis of Labyrinthine Diseases Altmann, F., Kornfeld, M. "Histological studies of Meniere's Disease," **Ann Otol** 74(4):915-43, Dec 1965; Altmann, F., Kornfeld, M., Shea, J. J. "Inner ear changes in otosclerosis," **Ann Otol** 75(1):5-31, Mar 1966	College of Physicians and Surgeons, Columbia Univ., 630 W. 168th Street, New York, New York 10032 Franz Altmann, M.D.	To investigate the pathogenesis of the otosclerotic focus and to search for the cause of the sensorineural hearing losses frequently encountered in this disease; to study certain aspects of the physiology of the labyrinthine fluids which could be of significance to this problem.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6132 10/65-5/68 5/69** $13,129	Middle Ear Dynamics Study	The Johns Hopkins Univ., 725 N. Wolfe Street, Baltimore, Md. 21205 Francis I. Catlin, M.D.	To confirm and expand the studies of Arnold and to determine the interrelationships of external/middle ear pressure differentials, auditory thresholds and absolute impedance measurements in a variety of otologic conditions. These would include congenital ear deformities, non-supparative otitis media, otosclerosis, as well as establishment of the normal values of these measurements for adults and children. Ultimate goal of project is to show the value of these measurements to a study of otologic disease.
6772 1/66-8/67 8/69** $24,740	Effects of Unilateral Labyrinthectomy in Man Nelson, J. R. "Vertigo," in the next edition of Cecil and Loeb's Textbook of Medicine (4 pages). (In Press - submitted in Oct of 1965)	Harbor General Hospital, 1000 W. Carson Street, Torrance, Calif. 90509 James R. Nelson, M.D.	To evaluate in patients the effect of unilateral labyrinthine denervation on postural equilibrium, locomotion, and extraocular movements; to study the time course and degree of compensation for loss of half of a peripheral sensory apparatus; to test several standardized tests of postural equilibrium, coordination, and locomotion for their sensitivity and specificity in detecting unilateral vestibular loss; to compare the findings in the labyrinthectomized group to patients with disequilibrium and/or ataxia due to loss of muscle strength, impairment of position sense, cerebellar disease, mild pyramidal tract impairments or defects in attention or memory function.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6824 2/67-1/68 1/70** $20,283	In Vitro Studies of Otosclerosis	Jefferson Medical College, 1025 Walnut Street, Philadelphia, Pa. 19107 Joseph Sataloff, M.D.	Detailed study of otosclerotic bone growth **in vitro**; the individual cells, the outgrowth, and the explant itself. To determine whether this growth in tissue culture can form new bone; to investigate nutritutional requirements of the tissue in order to use the optimal growth medium; to study the type of osteoblast which produces otosclerotic bone and determine in what way it differs from normal osteoblasts. To study factors which may discourage new growth of bone and which may enhance its growth.
7623* (Formerly 5970) 5/66-12/67 $32,804	Experimentally Induced Serous Otitis Media Paparella, M. M. "The effect of trauma in causing cochlear losses after stapedectomy," **Acta Oto-Laryngol** 62:(1): 33-9, 1966	University of Minnesota, Minneapolis, Minnesota Michael M. Paparella, M.D.	Producing serous otitis in experimental animals (cat and the squirrel monkey) and through studies of histopathological changes and enzyme alterations for additional light on the mechanisms which allow these middle ear effusions to develop using both light and electron microscopic methods.

NATIONAL INSTITUTE OF HEALTH EXTRAMURAL RESEARCH GRANTS ON ELECTROPHYSIOLOGY AND ANATOMY OF AUDITORY SYSTEM (Pages 228-232)

* - Project is completed ** - Extended commitment
Final reports are not yet available on these research projects

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
45* 9/50-4/68 $968,951	Anatomy and Physiology of the Auditory Cortex Tunturi, A. R. "Effect of spontaneous activity on afferent response in the MES auditory cortex of the dog," Amer J Physiol 197(5):1141-6, Nov 1959; "Effect of thalamic lesions on spontaneous electrical activity in MES auditory cortex," Amer J Physiol 201 (5):845-54, Nov 1961, Progress Report (Sept 11, 1961-May 27, 1965)	University of Oregon, Medical School, 3181 S.W. Sam Jackson Park Rd., Portland, Oregon Archie Tunturi, M.D., Ph.D.	Using dogs to study the statistical nature of the spatial and temporal manifestation of complex messages made up of a series of single elementary signals in the ear (p pluses) of different frequencies and time intervals. The study of the auditory cortex of the dog will form the general principles for study of the human auditory cortex.
3290 9/62-8/67 8/68** $152,007	Evoked Potential Audiology Ruhm, H. B., Walker, E. A., Jr. Progress Report - Evoked potential audiology, Sept 1, 1962 - Aug 31, 1964; Acoustically evoked potentials: Vestibulo-Myogenic, cochleo-myogenic, or cochleo-neurogenic response. (Part of Report to be submitted to J. of Neurophysiology)	University of Oklahoma, Medical Center, 800 N.E. 13th St., Oklahoma City, Oklahoma 73104 Howard B. Ruhm, Ph.D.	To investigate whether cortical potentials evoked by sensory stimuli show patterns that are differentially characteristic of lesions at various loci in the sensory pathways.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
5077 1/64-12/67 12/71** $150,738	Latency-Intensity Functions in the Auditory System Stebbins, W. C. "Auditory reaction time and the derivation of equal loudness contours for the monkey," J Exp Anal Behav 9(2):135-42, Mar 1966; Stebbins, W. C., Green, S., Miller, F. L. "Auditory sensitivity of the monkey," Science 153(3744):1646-7, Sep 1966	The University of Michigan, Ann Arbor, Mich. 48104 William C. Stebbins, Ph.D.	Research on two aspects of the infrahuman primate auditory system: the analysis of behavioral response latency in the trained monkey as a function of changes in the intensity and frequency of auditory stimulation, and the simultaneous measurement of amplitude and latency of evoked potentials in auditory cortex recorded from chronic implanted electrodes; and the development of behavioral conditioning procedures for obtaining absolute auditory threshold in monkeys.
5102 1/64-12/67 12/68** $113,827	An Investigation of the Auditory Nervous System of Birds	The University of Michigan, Ann Arbor, Mich. 48104 Nathan B. Gross, Ph.D.	Investigating the auditory system of birds by making anatomical studies of the legenae, electrophysiological studies of neural centers, and by using click and pure tone stimulation.
5143 1/64-12/67 12/70** $313,892	Neural Encoding of Patterned Acoustic Stimuli Butterfield, B. O., Goldstein, M. H., Jr. "An on-line display of single-unit data," IEEE Transactions on Bio-Medical Engineering 13(3):160-1, Jul 1966	Johns Hopkins University, 725 N. Wolfe Street, Baltimore, Md. 21205 Moise H. Goldstein, Jr., Sc.D.	To study neuroelectric responses to acoustic stimuli similar to that encountered by animals in their natural environment. The results of the research will lead to a better understanding of human communication and orientation by sound.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6186 9/66-8/67 8/69** $29,610	AER, CNV, and Vascular Measures of Semantic Change	University of Illinois at the Medical Center, 1853 W. Polk St., Chicago, Ill. 60612 Arthur J. Derbyshire, Ph.D.	These investigations attempt to specify ultra-subject factors that influence the evoked potential. Through the interrelationship of three physiological measures, it is hoped that changes will be found in response to the semantic dimensions of word stimuli. This work will incorporate new methods which will be directed toward the analysis of each single evoked cortical response, and later focused on a broader area of auditory information processing and communication.
6350 9/66-8/67 8/69** $20,367	Auditory System in the Cat and Monkey	Albany Medical College of Union University, New Scotland Avenue, Albany, New York 12208 Norman L. Strominger, Ph.D.	The main objective is to study the anatomical connections and organization of the auditory system in the brain stem and cerebral cortex of the cat using silver impregnation and retrograde cell change methods.
6397 9/65-5/68 5/70** $55,854	Acoustical Communication in Aquatic Organisms	University of Rhode Island, Kingston, R. I. 02881 Howard E. Winn, Ph.D.	Investigations on the detailed functional properties of the calls of toadfish and squirrelfish; hearing studies, both electrophysiological and behavioral; brain anatomical studies and stimulation. In this way sound communication in several species of fish can be better understood. Studies will also be made to find the cues that allow eels to leave fresh water and locate the distant spawning grounds in the southern Atlantic.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
6407 12/65-11/67 11/68** $18,784	Developmental Study of Infants' Hearing by EEG Shimizu, H., Imura, H., Ito, H. "Reliability of hearing test in the mentally retarded," **Otologia** (Tokyo) 37(4), 1965	Johns Hopkins University, 725 N. Wolfe Street, Baltimore, Md. 21205 Hiroshi Shimizu, M.D.	Investigation on the analysis of averaged electroencephalic response to acoustic stimuli in infants and young children; relation between responsivity and tone interval, between responsivity and the number of samples to be summed, between responsivity and rise-time of pure tones; thresholds to pure tone and click, form of response, and latency in relation to different age and sleeping levels.
6585 6/66-5/68 5/69** $11,995	Ocular and Postural Effects of Single Otolith Organs Goto, K., Tokumasu, K., Cohen, B. "Effects of head and eye position on semicircular canal-induced head and eye movements," **VII International Congress of Oto-Rhino-Laryngology**, Oct 29, 1965, Tokyo, Japan	University of Tokyo, Fac. of Med., Hongo 7-3-1, Bunkyo-ku, Tokyo, Japan Jun-Ichi Suzuki, M.D.	To further the study on single canal nerve stimulation in cats and monkeys through implantation of electrodes onto the labyrinth and utricular nerve by means of the otolith and canal systems.
7173* 4/67-3/68 $3,500	Efferent Mechanisms in Auditions Dewson, J. H., III, Nobel, K. W., Pribram, K. H. "Corticofugal influence at cochlear nucleus of the cat: Some effects of ablation in insular-temporal cortex," **Brain Res** 2:151-9, 1966; Dewson, J. H., III. "Complex auditory discrimination and lesions of temporal cortex in the monkey: a progress report," **J Acoust Soc Amer** 39:1254, 1966	Stanford University, Stanford, Calif. 94304 James H. Dewson, III, Ph.D.	To define the general neurological relationships which exist between acoustically-evoked electrical activity in the eighth nerve and electrophysiological activation of the efferent olivo-cochlear bundle in the hope that an understanding of these relationships will lead to a deeper knowledge of the neural substrates of perception.

Grant Number Starting Date and Duration Cost	Project Title and Selected Publications	Sponsoring Institution and Project Director	Description of Research
7417 (Formerly 3680) 9/62-5/68 5/70** $157,320	Race and Sex Differences in Auditory Responsivity Price, L. L., Shepherd, D. C., Goldstein, R. "Abnormal Bekesy tracings in normal ears," **J Speech Hearing Dis 39(2):139-44, May 1965**; Shepherd, D. C., Goldstein, R. "Relation of Bekesy tracings to personality and electro-physiologic measures," **J Speech Hearing Res 9(3):385-411, Sep 1966**; Price, L. L., Rosenblut, B., Goldstein, R., Shepherd, D. C. "The average evoked response to auditory stimulation," **J Speech Hearing Res 9(3):361-70, Sep 1966**	University of Wisconsin, 750 University Avenue, Madison, Wisc. 53706 Robert Goldstein, Ph.D.	Behavioral, psychologic, and electrophysiologic responses to tests used for clinical audiometry are being recorded (electroencephalograms, electrodermograms, electrocardiograms) and related to the primary subject categories, race and sex. Evoked cortical responses to repeated acoustic stimulation will be investigated.

ADDITIONS

Insert for page 28:

SOCIAL AND REHABILITATION SERVICE RESEARCH AND DEMONSTRATION PROJECTS IN DEAFNESS

2018* 1966-1969 $181,585	More Effective Vocational Guidance of High School and Adult Deaf	Oregon State Board of Control, Salem, Oregon 97310 David G. Berger, Ph.D.	To survey "employable" deaf adults and deaf high school students to identify background characteristics and test performances which predict successful vocational adjustment.

**-Project is not completed*

Insert for page 38:

SOCIAL AND REHABILITATION SERVICE GRANTEE AGENCIES OF RESEARCH AND DEMONSTRATION PROJECTS CONCERNING DEAFNESS

Alphabetically Listed

Agency	Project Number
Oregon State Board of Control	2018

Insert for page 39:

PROJECT DIRECTORS OF SOCIAL REHABILITATION SERVICE RESEARCH AND DEMONSTRATION GRANT PROGRAMS CONCERNING DEAFNESS

Alphabetically Listed

Project Director	Project No.	Grant Award
Berger, David G., Ph.D.	2018	$181,585